Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-504
JULY 17, 2003

Operations and Services
Public Weather Services, NWSPD 10-5

NATIONAL PUBLIC WEATHER FORECAST PRODUCTS SPECIFICATION

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/

OPR: W/OS22 (A. Noel) **Certified by:** W/OS22 (G. Austin)
Type of Issuance: Routine

SUMMARY OF REVISIONS: This directive supersedes NWSI 10-504, "National Public Weather Forecast Products Specification", dated October 1, 2002. This directive modifies some Mass News Disseminator (MND) headers and adds a "$$" to the end of all NWS plain language text products to ensure compliance with NWSI 10-1701. A new section describing the Preliminary Extended Forecast Discussion has been added (new Section 2). Finally the Alaskan Discussion portion (old Section 5) has been removed since these discussions are no longer issued.

signed 07/02/03

Gregory A. Mandt Date
Director, Office of Climate,
Water and Weather Services

Table of Contents:

1. **Introduction**. This procedural instruction describes narrative, tabular and graphical weather products issued by multiple National Centers for Environmental Prediction (NCEP) offices. The Canadian Urban Forecast, issued by the Meteorological Service of Canada, and retransmitted by the NWS, is included for domestic public interests.

2. **Preliminary Extended Forecast Discussion (product category PREEPD)**.

2.1 Mission Connection. Hydrometeorological Prediction Center (HPC) issues the preliminary extended forecast discussion that provides an evaluation of numerical meteorological models from NCEP as well as several numerical models from other foreign national meteorological services. These include the ensemble suites which are the operational model runs with different initialization conditions. The discussion focuses on the performance and impact on the weather forecast expected in the medium range time period, generally days 4 through 7. HPC reviews these with regard to model biases, recent performance, and consistency. This guidance is used by NWS field offices and the general meteorological community (private sector and the media) and supports the public weather program.

The purpose of this product is to provide early evaluation, prior to additional data based on the 1200 UTC model suites, to meet the workflow needs of NWS field offices. A final product is issued later (Extended Forecast Discussion, section 5), updating and potentially amending the preliminary product.

2.2 Issuance Guidelines.

2.2.1 Creation Software. HPC uses commercial text editor software.

2.2.2 Issuance Criteria. This is a routine, schedule-driven product.

2.2.3 Issuance Time. 1430 UTC daily.

2.2.4 Valid Time. 1200 UTC Day 4 to 1200 UTC Day 7.

2.2.5 Product Expiration Time. This product is superceded with the issuance of final version of the Extended Forecast Discussion (PMDEPD, section 5).

2.3 Technical Description. The extended range prognostic discussion should follow the format and content described in this section.

2.3.1 MND Broadcast Line. Not applicable.

2.3.2 MND Header. The MND header is “PRELIMINARY EXTENDED FORECAST DISCUSSION.”

2.3.3 Content. A narrative that may use standard National Weather Service abbreviations to

provide an evaluation of NCEP and foreign national meteorological services numerical models for Days 4 through 7. Denotes quality of model initializations, model trends, and preferred models for various regions of the CONUS.

2.3.4 Format. Example:

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FXUS02 KWNH 211405
PREEPD

PRELIMINARY EXTENDED FORECAST DISCUSSION
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
905 AM EST FRI FEB 21 2003

VALID 12Z TUE FEB 25 2003 THRU 12Z FRI FEB 28 2003

PRELIMINARY ADJUSTMENTS TO THE 00 UTC GFS

THE 00Z/06Z GFS/ECMWF ARE QUITE CONSISTENT WITH
YESTERDAYS FORECAST IDEOLOGY OF DEVELOPING A NEW MAJOR
WINTER STORM IN THE CENTRAL/SRN PLAINS WED DAY5...MOVING
IT EAST TO NORTHEAST THEREAFTER. OTHER OPERATIONAL MODELS
SUPPORT THIS SAME GENERAL SCENARIO. CURRENT MODEL
CONSENSUS IS FARTHER N THAN YESTERDAY WITH THE TRACK OF
THIS NEW SYS...AIMING IT TOWARDS THE OH VLY THU DAY6. THE
ONLY TIME WE DIFFER SIGNIFICANTLY FROM THE GFS IS ON FRI
DAY7 ...WHEN THE GFS ENSEMBLE MEAN SUPPORTS THE IDEA OF
THE PRIMARY LOW MOVING TOWARDS NJ RATHER THAN UP THE ST
LAWRENCE SEAWAY. THE 00Z/21 GFS ENSEMBLE MEAN SHOWS
ENOUGH UPPER CONFLUENCE OVER NRN NEW ENG THU DAY6 TO
SUPPRESS THE TRACK OF THE OH VLY LOW. THEREFORE...WE
TRENDED FRI DAY7 TOWARDS THE MORE SLY LOW TRACK
SUGGESTED BY THE GFS ENSEMBLE MEAN.

ALL CLUSTERS...

GFS MASS FIELDS LOOK REASONABLE NATIONWIDE THRU THU
DAY6. FOR FRI DAY7...OUR ADJUSTMENTS TO MOS IN THE ERN
STATES REFLECT OUR SWD CORRECTION OF THE OH VLY LOW
TRACK TOWARDS THE 00Z/21 GFS ENSEMBLE MEAN. SEE
GRAPHICS.

FLOOD

GRAPHICS AVAILABLE AT http://www.hpc.ncep.noaa.gov

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2.4 Updates, Amendments, and Corrections. No updates. HPC will correct for format and grammatical errors as required.

3. **Model Diagnostic Discussion (product category PMDHMD)**.

3.1 Mission Connection. Hydrometeorological Prediction Center (HPC) issues the model diagnostic discussion that provides an evaluation of the analyses of the three primary models (Eta, NGM, GFS), a review of model trends and biases and a description of model differences and preferences. This guidance is used by CONUS NWS field offices and the general

meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

3.2 Issuance Guidelines.

3.2.1 Creation Software. HPC uses commercial text editor software.

3.2.2 Issuance Criteria. This is a routine, schedule-driven product.

3.2.3 Issuance Time. 0530 and 1730 UTC.

3.2.4 Valid Time. 0000 UTC Day 1 to 1200 UTC Day 2.

3.2.5 Product Expiration Time. Product expires with the next issuance.

3.3 Technical Description. The short range prognostic discussion should follow the format and content described in this section.

3.3.1 MND Broadcast Line. Not applicable.

3.3.2 MND Header. The MND header is "MODEL DIAGNOSTIC DISCUSSION."

3.3.3 Content. A narrative that may use standard National Weather Service abbreviations to provide an evaluation of the Eta, NGM and GFS for Day 1 and Day 2. Denotes quality of model initializations, model trends, and preferred models for various regions of the CONUS.

3.3.4 Format.

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FXUS10 KWNH 300519
PMDHMD

MODEL DIAGNOSTIC DISCUSSION
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
119 AM EDT WED APR 30 2003

VALID APR 30/0000 UTC THRU MAY 02/1200 UTC

MODEL INITIALIZATION...

...500 MB...
THE 00Z GFS OVERALL HAS A BETTER INITIALIZATION/MATCHES RAOB
DATA WITH THE UPPER-LEVEL TROUGH EXTENDING DOWN THE WEST
COAST AND THE SHORT WAVE MOVING ACROSS ERN OK/NERN TX THAN
THE ETA.

...MOISTURE...
OVERALL... THE ETA HAS A BETTER INITIALIZATION OF LL
MOISTURE/PWS ACROSS THE CONUS THAN THE GFS. THE GFS THOUGH
DOES HANDLE THE MOISTURE AXIS AHEAD OF THE DRYLINE IN TX
BETTER THAN THE ETA WHICH IS MORE BROAD BRUSHED.
MODEL TRENDS...
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...ETA...
THE BIGGEST TREND BETWEEN THE 00Z/30 GFS AND THE 12Z GFS LIES WITH THE SHORT WAVE ENERGY EJECTING FROM THE SWRN US INTO THE CENTRAL PLAINS DURING THE FIRST 18 HRS OF THE FCST PERIOD. THE 00Z ETA IS TRENDING LESS AMPLIFIED AND FASTER IN MOVING THE ENERGY ALOFT INTO THE PLAINS AND SHEARING IT OUT AHEAD OF THE CLOSED VORTEX/UPPER TROUGH OVER CANADA EXTENDING SWRD INTO THE UPR GT LAKES. AT THE SURFACE... THE TREND IS A WEAKER SURFACE LOW IN THE CENTRAL PLAINS DURING THE FIRST 18 HRS AND INSTEAD OF A CONCENTRATED/DEEP SURFACE LOW... MORE RIPPLES OR WAVES MOVING ALONG THE SURFACE FRONT. THE FASTER FLOW ALSO KEEPS THE FRONT ON A NORTHEAST TO SOUTHWEST CORRIDOR OR SETUP THROUGH PERIOD AND WITH THE LESS AMPLIFIED FLOW... THE FRONT NEVER DROPS AS FAR SOUTH INTO THE DEEP SOUTH/SRN PLAINS LIKE THE 12Z ETA SUGGESTED BY 60 HRS.

THE SHORT WAVE THAT ENTERS THE WRN GULF AT THE BEGINNING OF THE FCST PERIOD ALONG THE VERY FAST AND ACTIVE SUBTROPICAL JET IS TRENDING STRONGER AND MORE AMPLIFIED THROUGH THE FCST PERIOD. THE 00Z ETA TAKES THE SHORT WAVE FROM THE WRN GULF AND MOVES IT TOWARD OR ARRIVING IN FL BETWEEN 24 AND 36 HRS. AFTER 36 HRS... THE 00Z ETA BEGINS TO DEVELOP MUCH MORE OF A SURFACE WAVE ALONG THE SOUTHEAST COAST AND EVEN A 1012 MB LOW BY 60 HRS ALONG THE GULF STREAM.

THE CLOSED 500 MB LOW DUE WEST OF VANCOUVER ISLAND TONIGHT IS TRENDING FASTER IN DROPPING TO THE BASE OF THE UPPER-LEVEL TROUGH THAN THE 12Z ETA AND EJECTING OUT TOWARDS CENTRAL AND NRN CA IN THE LAST 12 HRS OF THE FCST PERIOD.

...GFS...
THE 00Z/30 GFS IS VERY CONSISTENT WITH THE 12Z/29 GFS OVER MOST OF THE CONUS DURING THE 60 HR FCST PERIOD.

THE 00Z GFS IS A LITTLE SLOWER ON THE PROGRESSION OF THE SHORT WAVE ENTERING THE WRN GULF 12 TO 18 HRS IN THE FCST ALONG THE SUBTROPICAL FLOW. THIS SLOWER TREND CONTINUES THROUGH 48 HRS AS THE SHORT WAVE PASSES THROUGH FL BUT DEVELOPS A SURFACE LOW QUICKER THAN THE 12Z GFS OFF THE ERN COAST OF FL AROUND 30 HRS. BY 60 HRS... THE 00Z GFS HAS A 1005 MB LOW OFF THE SOUTHEAST COAST... WHICH IS 4 TO 7 MB DEEPER THAN THE 12Z GFS.

THE 00Z GFS IS FASTER IN DROPPING THE CLOSED LOW INTO THE BASE OF THE UPPER-LEVEL TROUGH OFF THE WEST COAST DURING THE PERIOD AND KICKING IT OUT AT THE END OF THE PERIOD TOWARDS CA.

MODEL DIFFERENCES AND PREFERENCES...

COMPARED TO LAST EVENING AT THIS TIME... THE 00Z MODEL GUIDANCE IS IN MUCH BETTER AGREEMENT WITH THE WHOLE UPPER-LEVEL PATTERN AND SCENARIO ACROSS THE CONUS DURING THE 60 HR FCST.

THE SHORT WAVE MOVING INTO THE PLAINS IS HANDLED VERY SIMILAR THROUGH THE FIRST 48 HRS... A FLAT/FAST/LESS AMPLIFIED FLOW. THEN AFTER 48 HRS... THE GFS/CANADIAN AND UKMET BECOME SLIGHTLY MORE AMPLIFIED WITH THE 500 MB PATTERN ACROSS THE PLAINS INTO THE WRN OH VLY. THE ETA KEEPS THE FAST/LESS AMPLIFIED FLOW IN PLACE. AT THE SURFACE... THE FRONT IS VERY SIMILAR... ELONGATED FROM WRN NEW ENGLAND DOWN THROUGH

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THE OH VLY AND INTO THE SRN PLAINS AT 48 HRS. BY 60 HRS... THE
FRONT IS MARCHING THROUGH NEW ENGLAND AND A SURFACE WAVE
DEVELOPS BACK IN THE OH VLY AND THE FRONT EXTENDS DOWN INTO
AR/TX. THE GFS DEVELOPS AN ERRONEOUS VORT IN WRN OH AT 54
HRS AND MOVES INTO NWRN PA BY 60 HRS... THIS VORT LOOKS
EXTREMELY SUSPICIOUS AND IS IGNORED. A CONSENSUS WAS USED
THROUGH 48 HRS AND THEN SUGGEST FOLLOWING THE SLIGHTLY
MORE AMPLIFIED GFS/UKMET AND CANADIAN. SEE QPFPFD FOR MORE
ON THE PRECIP FCST.

THE ETA/GFS AND UKMET ARE VERY SIMILAR WITH THE SHORT WAVE
MOVING FROM THE WRN GULF... ACROSS FL AND OFF THE SOUTHEAST
COAST DURING THE PERIOD. THE GFS AND UKMET OFFER STRONGER
SOLUTIONS ONCE THE SHORT WAVE REACHES THE WEST COAST OF FL
AND MOVES NEWRD. THE GFS AND UKMET ARE ALSO QUICKER IN
DEVELOPING A SURFACE LOW OVER FL THAN THE ETA WAVE AND THIS
STRONGER SOLUTION CONTINUES THROUGH 60 HRS AS THE GFS AND
UKMET HAVE A SURFACE LOW IN THE GULF STREAM AROUND 1005/1001
MB RESPECTIVELY. THE ETA AT THIS POINT IS SLIGHTLY FARTHER
SOUTH AND WEST WITH THE LOW AND A PRESSURE AROUND 1009 TO
1012 MB. OVERALL... NOT BAD CONTINUITY BETWEEN THE GUIDANCE...
ESPECIALLY THE ETA TRENDING MORE AMPLIFIED AND STRONGER.
MODEL DIAG SUGGESTS A CONSENSUS OF THE STRONGER GFS/UKMET
BUT BEWARE OF CONVECTIVE FEEDBACK/QPF ISSUES ACROSS FL WITH
THE GFS... SEE QPFPFD FOR MORE.

THE MODELS ARE VERY SIMILAR WITH THE HANDLING OF THE CLOSED
LOW DROPPING AND DIGGING INTO THE BASE OF THE UPPER-LEVEL
TROUGH OFF THE WEST/CA COAST. MODEL DIAG SUGGESTS GOING
WITH THE OVERALL/CONSISTENT 00Z GUIDANCE AND MOVING PRECIP
INTO CENTRAL/NRN CA BY 48/54 HRS.

MUSHER

MODEL BIASES AT WWW.HPC.NCEP.NOAA.GOV/HTML/MODEL2.SHMTL

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3.4 Updates, Amendments, and Corrections. No updates. HPC will correct for format and grammatical errors as required.

4. **Short Range Forecast Discussion (product category PMDSPD)**.

4.1 Mission Connection. HPC issues a short range discussion that provides the meteorological reasoning behind the Surface Fronts and Pressure Charts (section 13) and the Surface Instantaneous Precipitation Charts (section 14) graphical products. This guidance is used by CONUS NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

4.2 Issuance Guidelines.

4.2.1 Creation Software. HPC uses commercial text editor software.

4.2.2 Issuance Criteria. This is a routine, schedule-driven product.

4.2.3 Issuance Time. 0700 and 1915 UTC.

4.2.4 Valid Time. 0000 UTC Day 1 to 1200 UTC Day 2 for 0700 UTC issuance, and 1200 UTC Day 1 to 0000 UTC Day 3 for 1915 UTC.

4.2.5 Product Expiration Time. Product expires with the next issuance.

4.3 Technical Description. The short range prognostic discussion should follow the format and content described in this section.

4.3.1 MND Broadcast Line. Not applicable.

4.3.2 MND Header. The MND header is "SHORT RANGE FORECAST DISCUSSION."

4.3.3 Content. A narrative that may use standard NWS abbreviations that describes the meteorological reasoning for the location of significant weather features and precipitation across the contiguous US for the next 12-48 hours.

4.3.4 Format.

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FXUS01 KWBC 080700
PMDSPD

SHORT RANGE FORECAST DISCUSSION
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
200 AM EST WED JAN 08 2003

VALID 12Z WED JAN 08 2003 - 00Z FRI JAN 10 2003

S/W ENERGY SAGGING DOWN FROM CENTRAL CANADA WILL PUT A DENT IN
THE ERN SIDE OF UPPER RIDGE SITTING OVER US ROCKIES AND PLAINS
STATES...WITH LARGE COLD VORTEX TAKING SHAPE OVER SERN CANADA
BY F48.  AT THE SFC...ARCTIC FRONT WILL STAY N OF US...WITH CP
BOUNDARY TAKING SHAPE FROM PLAINS TO MID ATL REGION BY EARLY
THU.  PATTERN WILL CONTINUE TO BE A DRY ONE...WITH STRONG HIGH
KEEPING PAC MOISTURE AT BAY AND WLY FLOW CLAMPING DOWN GULF.  A
LITTLE LIGHT SNOW AND SNOW SHOWERS WILL DUST THE GREAT LAKES
AND NE THIS PD AS S/W ENERGY SWEEPS THRU.  ELSEWHERE...A FEW
SHOWERS ARE POSSIBLE OVER NRN CA AND SWRN OR AS PAC ENERGY
LIFTS INTO THE RIDGE.  FINALLY...WIDELY SCT CONVECTION IS
ANTICIPATED OVER THE DESERT SW TODAY AS UPPER LOW LIFTS INTO
THE REGION FROM OFFSHORE.

CISCO

GRAPHICS AVAILABLE ON THE WEB AT WWW.HPC.NCEP.NOAA.GOV

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4.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

5. **Extended Forecast Discussion (product category PMDEPD)**.

5.1 Mission Connection. HPC issues an extended range discussion that provides the meteorological reasoning behind the Days 3-7 Surface Progs (section 20) and Days 3-7 Temperature/Precipitation Forecast Anomalies (section 21) graphical products. This guidance is used by CONUS and Alaskan NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

5.2 Issuance Guidelines.

5.2.1 Creation Software. HPC uses commercial text editor software.

5.2.2 Issuance Criteria. This is a routine, schedule-driven product.

5.2.3 Issuance Time. 1830 UTC/1930 UTC (230 PM EDT/EST).

5.2.4 Valid Time. 1200 UTC Day 3 to 1200 UTC Day 7.

5.2.5 Product Expiration Time. Product expires with next product issuance.

5.3 Technical Description. The Extended Forecast Discussion should follow the format and content described in this section.

5.3.1 MND Broadcast Line. Not applicable.

5.3.2 MND Header. The MND header is "EXTENDED FORECAST DISCUSSION."

5.3.3 Content. This is a text product that describes the meteorological reasoning of the forecaster behind the generation of the Days 3 - 7 Surface Progs and Days 3 - 7 24-Hour PoP Anomaly forecasts for CONUS and Alaska.

5.3.4 Format.

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FXUS02 KWBC 071830
PMDEPD

EXTENDED FORECAST DISCUSSION
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
230 PM EST TUE JAN 07 2003
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VALID 12Z FRI JAN 10 2003 - 12Z TUE JAN 14 2003

...PATTERN OVERVIEW...

NCEP MODEL MEANS INDICATE A CONTINUATION OF A RATHER
AMPLIFIED PATTERN OVER NOAM DURING THE NEXT WEEK.  LARGE
POSITIVE HEIGHT ANOMALY CENTERED OVER WRN CANADA
ASSOCIATED WITH THE HIGHLY AMPLIFIED WRN RIDGE DRIFTS
SLOWLY EWD ACROSS THE NORTHWEST TERRITORIES WHILE THE
RIDGE AXIS REESTABLISHES ITSELF RIGHT ALONG THE U.S. WEST
COAST BY D+8.  NRN PACIFIC TROF EXTENDS SWD TOWARD THE
HAWAIIAN ISLANDS BY THE END OF THE PERIOD.  IN THE EAST...THE

(...portion omitted for brevity...)

ERN TROF RESULTING IN A SERIES OF WEAK SFC SYSTEMS
AFFECTING MAINLY THE GREAT LAKES AND EAST.  OFF THE WEST
COAST...UKMET AGREES WITH 00Z AND 06Z GFS IN BRINGING A LOW
SOMEWHERE INTO THE WA/BC AREA...AND THEN PUSH IT EWD INTO
THE GREAT BASIN BY DAY 7 ON TUESDAY.  THE 12Z GFS SHOWS
LITTLE SIGNIFICANT CHANGE FROM ITS PREVIOUS RUNS.  IN
SHORT...NO MAJOR STORM SYSTEMS ARE FCST TO AFFECT THE
LOWER 48 DURING THE NEXT 7 DAYS.

REGIONAL HIGHLIGHTS...

...WEST COAST AND ROCKIES...

HEAVIEST PCPN WILL BE CONCENTRATED ALONG THE IMMEDIATE
WA/OR COAST WITH THE PASSAGE OF A PACIFIC STORM SYSTEM
DAYS 4 AND 5.  RELATIVELY FAST MOTION OF
THIS SYSTEM WILL KEEP MAX AMTS DOWN BUT STILL EXPECTING
AMTS UP TO 1.5 INCHES IN THE OLYMPIC PENINSULA WITH LESSER
TOTALS SWD INTO NRN CA.

...EAST...

GENERALLY BELOW NORMAL HEIGHTS WILL PREVAIL WITH ONLY
MINOR SHORTWAVES ROTATING AROUND THE SLOWLY
WEAKENING CANADIAN VORTEX.  THUS EXPECT ONLY LIGHT SNOW
AROUND THE GREAT LAKES WITH EACH PASSING IMPULSE.

...AK...

WET AND WINDY CONDITIONS SHOULD PREVAIL THROUGH MOST
OF THE PERIOD OVER THE SRN THIRD OF THE STATE AND THE
ALEUTIANS DUE TO THE PERSISTENT MEAN UPPER LOW ANCHORED
OVER THE NRN PACIFIC.

MAUSSER

GRAPHICS AVAILABLE ON THE WEB AT WWW.HPC.NCEP.NOAA.GOV

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5.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

6. **Caribbean Discussion (product category PMDCA)**.

6.1 Mission Connection. HPC issues the Caribbean Discussion as guidance to Central American and Caribbean Basin users. It includes a 3-day forecast and model comparison.

6.2 Issuance Guidelines.

6.2.1 Creation Software. HPC uses commercial text editor software.

6.2.2 Issuance Criteria. This is a routine, schedule-driven product.

6.2.3 Issuance Time. 1830 UTC, non-holiday Monday-Friday only.

6.2.4 Valid Time. 0000 UTC Day 1 thru 0000 UTC Day 3.

6.2.5 Product Expiration Time. Product expires with next product issuance.

6.3 Technical Description. The Caribbean Discussion should follow the format and content described in this section.

6.3.1 MND Broadcast Line. Not applicable.

6.3.2 MND Header. The MND header is "TROPICAL BULLETIN - INTERNATIONAL DESKS."

6.3.3 Content. This text bulletin gives a synopsis and forecast for Mexico, the Caribbean and South America north of the Equator for Days 1 - 3.

6.3.4 Format.

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FXCA20 KWBC 291830
PMDCA

TROPICAL BULLETIN - INTERNATIONAL DESKS
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
1830 UTC TUE APR 29 2003

GFS DATA AT FTPPRD.NCEP.NOAA.GOV/PUB/DATA/NCCF/COM/AVN/PROD/

DISCUSSION VALID FROM 29/00 UTC...(FROM THE 00 AND 12 UTC MDL
DATA.)

MID/UPPER LVL SHORT WAVE PERTURBATIONS ARE TO STREAK ACROSS NRN
MEXICO...WITH MDLS SHOWING TWO PERTURBATIONS ACROSS THE SIERRA
MADRE OCCIDENTAL...TO AFFECT THE AREA AT 24 AND 48 HRS
RESPECTIVELY...TO THEN CONTINUE E ACROSS THE NRN GULF OF
MEXICO. THE SHORT WAVE TROUGHS ARE TO TRIGGER CONVECTION OVER
SINALOA-SRN CHIHUAHUA-DURANGO...WHERE ALONG THE SIERRA MADRE
OCCIDENTAL THEY WILL FAVOR ISLD/SCT CONVECTION. IN THIS AREA
EXPECT RAINFALL ACCUMULATION OF 00-05MM/DAY WITH ISLD MAXIMA OF
10-15MM.
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IN THIS CYCLE THE MDLS SHOW GRADUAL EVOLUTION OF THE 500 HPA
HIGH OFF THE COAST OF MEXICO/ERN PACIFIC...WITH THE HIGH TO
SLOWLY MIGRATE FROM 15N 103W AT 24 HRS TO 15N 110W BY 72 HRS.
THIS HIGH SUPPORTS A RIDGE ACROSS SRN MEXICO INTO CNTRL
AMERICA/CARIBBEAN BASIN. THE RIDGE...INITIALLY BROAD...BECOMES
NARROW AN ELONGATED ACROSS CNTRL AMERICA/WRN CARIBBEAN THROUGH
48-60 HRS. OVER SRN MEXICO AND THE YUCATAN...A STABLE AIR MASS
IS TO PERSIST THROUGH 72 HRS...TO INHIBIT ORGANIZED DEEP
CONVECTION. HONDURAS-GUATEMALA AND EL SALVADOR ARE LIKELY TO

(...portion omitted for brevity...)


A 250 HPA HIGH OVER NRN VENEZUELA NEAR 10N 61W AT 24-36 HRS IS
TO SUSTAIN A BROAD RIDGE OVER THE ERN CARIBBEAN. AT 48-60 HRS
THE HIGH WILL TRY TO REFORM N OF THE GUIANAS...BUT BY 72 HRS
ALL THAT REMAINS IS A NARROW RIDGE ACROSS THE TROPICAL
ATLANTIC. AT 500 HPA THIS SYSTEM REFLECTS AS A WEAK RIDGE
THROUGH 24-36 HRS...WITH A HIGH S OF PUERTO RICO AT 48 HRS TO
MOVE NEAR JAMAICA BY 72 HRS. OVERALL A WEAK SUBSIDENT PATTERN
IS EXPECTED OVER THE ERN CARIBBEAN. AT 850 HPA...A NARROW RIDGE
EXTENDS E ALONG 20N...ACROSS THE GRTR ANTILLES. THIS FAVORS AN
EASTERLY FLOW ACROSS THE LESSER ANTILLES-VIRGIN ISLES-PUERTO
RICO...WHILE ACROSS HISPANIOLA IT IS TO FAVOR A SERLY FLOW
THROUGH 36 HRS. THE SOUTHERLY FLOW WILL RESULT ABOVE NORMAL
TEMPERATURES ON THE NRN SLOPES OF THE MOUNTAINS ACROSS
HISPANIOLA...WITH CONVECTION TO INITIALLY CONFINE TO THE SRN
HALF OF THE ISLAND.

AS PREVIOUSLY FCSTED...MODULATION OF THE MID/UPPER LVL RIDGE
ACROSS THE ERN CARIBBEAN IS RESULTING IN A DRYER AIR MASS AND A
LESS ACTIVE EQUATORIAL TROUGH ACROSS COLOMBIA-VENEZUELA. WE
STILL EXPECT LITTLE CHANGE IN THIS PATTERN THROUGH 72 HRS.
EXPECT RAINFALL ACCUMULATION OF 05-10MM/DAY AND ISLD MAXIMA OF
15-35MM ACROSS WRN-SRN COLOMBIA AND SRN VENEZUELA. ISLD TO SCT
CONVECTION IS TO CONTINUE ACROSS THE GUIANAS...ALTHOUGH A
SLIGHTLY DRYER AIRMASS IS EXPECTED OVER THE AREA THROUGH 24-30
HRS...A MOIST SURGE AT 30-36 HRS WILL FAVOR A RAPID INCREASE
FIRST OVER FRENCH GUIANA AT 42-48 HRS AND SURINAME BY 54-60
HRS. MEANWHILE EXPECT RAINFALL ACCUMULATION OF 10-20MM/DAY AND
MAXIMA OF 60MM.

LOPEZ...SMN (MEXICO)
DAVISON...NCEP (HPC)

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6.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

7. **Hawaiian Discussion (product category PMDHI)**.

7.1 Mission Connection. The Hawaiian Discussion focuses on Days 1-7 model differences, and highlights the reasoning used by the HPC forecaster in terms of model preferences for particular weather situations. This product supports public and private sector having a particular focus on Hawaii.

7.2 Issuance Guidelines.

7.2.1 Creation Software. HPC uses commercial text editor software.

7.2.2 Issuance Criteria. This is a routine, schedule-driven product.

7.2.3 Issuance Time. 1300 UTC.

7.2.4 Valid Time. 0000 UTC Day 2 to 0000 UTC Day 7.

7.2.5 Product Expiration Time. Product expires after the next product issuance.

7.3 Technical Description. The Hawaiian Discussion should follow the format and content described in this section.

7.3.1 MND Broadcast Line. Not applicable.

7.3.2 MND Header. The MND header is "HAWAII EXTENDED FORECAST DISCUSSION"

7.3.3 Content. This is a text product that describes the meteorological reasoning for the location of significant weather and precipitation features in the vicinity of the Hawaiian Islands for the 7 day period.

7.3.4 Format.

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FXHW01 KWNH 081300
PMDHI

HAWAII EXTENDED FORECAST DISCUSSION
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
800 AM EST WED JAN 08 2003

VALID 00Z THU JAN 09 2003 - 00Z THU JAN 16 2003

STRONG PACIFIC WESTERLIES WILL KEEP THE PATTERN
PROGRESSIVE ACROSS THE MID-LOWER LATITUDES WITH THE
MODELS SUPPORTING A SERIES OF SHORTWAVE TROF PASSAGES
THAT WOULD ALLOW A COLD FRONT TO WORK THROUGH THE
ISLANDS FRI INTO SAT.  THIS FRONT SHOULD ENHANCE LOCAL
SHOWER ACTIVITY AND WINDS.   THE 00 UTC GFS MAINTAINS POST-
FRONTAL HIGH PRESSURE FUELED TRADES INTO MON.  THE
ECMWF AND UKMET WEAKEN THE HIGH ABOUT A DAY QUICKER.
MODEL SHORTWAVE SKILL BY NEXT WEEK IS PROBABLY NOT THAT
GOOD IN THIS PROGRESSIVE FLOW REGIME BUT PREFER TO
WEAKEN WINDS QUICKER THAN THE 00 UTC GFS AND KEEP TRADES
RELATIVELY WEAK INTO MIDWEEK CONSIDERING NCEP AND ECMWF
ENSEMBLE MEAN GUIDANCE.  THE 06 UTC GFS HAS TRENDED
TOWARD THIS PREFERRED SOLUTION.

SCHICHTEL
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GRAPHICS AVAILABLE ON THE WEB AT WWW.HPC.NCEP.NOAA.GOV

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7.4 Updates, Amendments, and Corrections. No updates are issued for this product. HPC will correct for format and grammatical errors as required.

8. **South America Synopsis (product category PMDSA)**.

8.1 Mission Connection. HPC International Desk issues the South America Synopsis as guidance to regional users, the U.S. Department of Agriculture, and the Department of Defense.

8.2 Issuance Guidelines.

8.2.1 Creation Software. HPC uses commercial text editor software.

8.2.2 Issuance Criteria. This is a routine, schedule-driven product.

8.2.3 Issuance Time. 1400 UTC, non-holiday Monday-Friday only.

8.2.4 Valid Time. 0000 UTC Day 1.

8.2.5 Product Expiration Time. Product expires with next product issuance.

8.3 Technical Description. The South America Synopsis should follow the format and content described in this section.

8.3.1 MND Broadcast Line. Not applicable.

8.3.2 MND Header. The MND header is "SOUTH AMERICA SYNOPSIS - INTERNATIONAL DESKS."

8.3.3 Content. This text bulletin gives a synopsis for South America south of the Equator.

8.3.4 Format.

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FXSA20 KWBC 301234
PMDSA

SOUTH AMERICA SYNOPSIS - INTERNATIONAL DESKS
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
1234 UTC WED APR 30 2003

SYNOPSIS...THE BOLIVIAN HIGH AT 200 HPA CENTERS OVER SOUTH AMERICA
NEAR 13S 65W. THE HIGH SUSTAINS A RIDGE OVER THE CONTINENT ON
AREAS NORTH OF 25S AND WEST OF 50W. THE RIDGE IS INDUCING A SHORT
WAVE TROUGH THAT NOW LIES ALONG 20S 35W...TO 10S 50W. CONVECTION
OVER NORTHERN SOUTH AMERICA IS LIMITING TO AREAS NORTH OF
10S...WITH MOST INTENSE CONCENTRATING ALONG THE NORTHERN COAST OF
BRASIL AND INLAND ALONG 00N IN ASSOCIATION WITH THE EQUATORIAL
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TROUGH. WIDELY ISOLATED CONVECTION DOTS THE SIERRA OF PERU AND THE ALTIPLANO OF BOLIVIA...WITH SCATTERED CONVECTION INTO THE NORTHERN JUNGLE OF PERU AND INTO ECUADOR.

AT 250 HPA...THE ANALYSIS SHOWS THE SOUTHERN BRANCH OF THE POLAR JET WITH AXIS ALONG A 126KT MAXIMA AT 54S 120W...55S 110W... EXITING AT 54S 97W. IT REFORMS AT 66S 88W...CROSSING 65S 71W..A 131KT MAXIMA AT 62S 56W...58S 39W...53S 35W...EXITING AT 48S 34W. THE NORTHERN BRANCH LIES ALONG A 152KT MAXIMA AT 50S 120W...50S 112W...48S 105W...EXITING AT 44S 99W. IT REFORMS AT 34S 77W...THEN ALONG 34S 71W...A 135KT MAXIMA AT 35S 65W...36S 52W...35S 43W...A 139KT MAXIMA AT 34S 35W...33S 28W...35S 20W...AND 38S 14W. THE SUBTROPICAL JET LIES ALONG 42S 120W...40S 110W...EXITING AT 30S 105W. IT REFORMS AT 17S 97W...19S 90W...23S 85W...25S 77W...A 146KT MAXIMA AT 28S 70W...30S 62W...31S 54W...30S 44W...28S 33W...28S 26W...28S 20W...EXITING AT 28S 17W. THE SATELLITE IMAGERY AND THE MODEL ANALYSIS SUGGEST AN AREA OF MOUNTAIN WAVE TURBULENCE IS PRESENT OVER NORTHWESTERN ARGENTINA/NORTHERN CHILE WHERE THIS JET MAKES LANDFALL OVER THE CONTINENT.

THE 500 HPA ANALYSIS SHOWS A SOUTHERN STREAM TROUGH WITH AXIS NORTH FROM 63S 92W...ALONG 55S 92W...TO 43S 93W. THIS TROUGH IS CLASHING WITH A SHORT WAVE RIDGE THAT LIES SOUTH FROM 40S 82W...ACROSS PUNTA ARENAS CHILE...TO 63S 70W. ON THE NORTHERN STREAM...A LOW NEAR 37S 96W EXTENDS A SHORT WAVE TROUGH ALONG 30S 97W TO 24S 105W. EAST OF THIS CENTER...A WANING LOW NEAR 43S 76W EXTENDS A SHORT WAVE TROUGH ALONG THE CENTRAL COAST OF CHILE TO CONCEPCION/CURICO. FARTHER EAST...A MATURED OCCLUDED LOW NEAR 73S 60W SUPPORTS A LOW AMPLITUDE TROUGH OVER THE ANTARCTIC PENINSULA. FARTHER EAST...A LONG WAVE TROUGH ESTABLISHED OVER THE CENTRA ATLANTIC DUE TO THE MERGER OF A SERIES OF PERTURBATIONS...WITH TROUGH EXTENDING FROM 60S 30W....ALONG 50S 32W...TO 38S 37W. A SECONDARY CYCLONIC VORTICITY TONGUE PRECEDES THIS AXIS...EXTENDING FROM 60S 19W...ALONG 50S 23W...TO 43S 28W. FARTHER NORTH...A CYCLONIC MAXIMA IS MOVING ACROSS SOUTHERN BRASIL ALONG 29S 49W.

THE SURFACE ANALYSIS SHOWS A DEEP 962 HPA LOW AT 61S 93W...WITH A FRONT ALONG 59S 96W...64S 93W...62S 76W...TRIPLE POINT AT 60S 73W...55S 78W...54S 83W...A 990 HPA LOW AT 52S 85W...48S 86W...45S 88W...TO 42S 90W. A 954 HPA LOW AT 62S 46W SUPPORTS A FRONT ALONG 60S 51W...65S 54W...63S 42W...TRIPLE POINT AT 59S 45W...56S 51W...54S 58W...TO SOUTHERN PATAGONIA. ON THE NORTHERN STREAM...A 1002 HPA OCCLUDED LOW AT 37S 93W SUPPORTS A FRONT ALONG 35S 95W...38S 97W...40S 92W...TRIPLE POINT AT 37S 91W...32S 91W...30S 94W...27S 96W...AND 25S 100W. EAST OF THIS FRONT...A BROAD RIDGE DOMINATES CENTRAL CHILE/ARGENTINA...ANCHORED ON DUAL HIGHS...A 1019 HPA HIGH AT 29S 82W AND A 1023 HPA HIGH AT 41S 56W. A WEAK 1018 HPA LOW SEPARATES THESE HIGHS...CENTERING OVER CENTRAL CHILE NEAR 39S 72W (TEMUCO). THIS SYSTEM SUPPORTED LIGHT RAINFALL OVER CHILE/WESTERN ARGENTINA BETWEEN 38S-42S. A 986 HPA LOW AT 45S 21W EXTENDS A FRONT ALONG 41S 21W...38S 23W...35S 25W...34S 29W...TO 33S 33W. AN ELONGATED FRONT LIES FARTHER NORTH ALONG 26S 20W...25S 24W...25S 29W...26S 34W...27S 39W...28S 43W...30S 48W...RIO GRANDE DO SUL BRASIL-SOUTHERN MESOPOTAMIA TO EL CHACO ARGENTINO. THIS SYSTEM SUPPORTED DEEP CONVECTION OVER SOUTHERN BRASIL.

SANTOS...INMET (BRASIL)
DAVISON...NCEP (HPC)

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8.4 Updates, Amendments, and Corrections. This product is not updated or amended. HPC will correct for format and grammatical errors as required.

9. **Surface Fronts & Pressure Analysis (product categories 90F,90I)**.

9.1 Mission Connection. HPC issues the Surface Fronts and Pressure Analysis as guidance to CONUS and Alaskan NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

9.2 Issuance Guidelines.

9.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

9.2.2 Issuance Criteria. These are routine, schedule-driven products.

9.2.3 Issuance Time. Refer to Table 1.

9.2.4 Valid Time. Refer to Table 1.

HPC Surface Fronts and Pressure Analysis Product Schedule				
Valid Time (UTC)	***Issuance Time (UTC)***	***AWIPS ID***	***WMO Header***	***Product Description***
0000	0130	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
0300	0430	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
0600	0730	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
0900	1030	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
1200	1330	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
1500	1730	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
1800	1930	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)
2100	2230	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Reg'l U.S.)

Table 1. Surface Fronts and Pressure Chart Issuance and Valid Times.

9.2.5 Product Expiration Time. Not applicable.

9.3 Technical Description. Charts should follow the format and content described in this section.

9.3.1 MND Broadcast Line. Not applicable.

9.3.2 MND Header. Not applicable.

9.3.3 Content. This product depicts the analysis of synoptic and sub-synoptic/mesoscale surface features including highs, lows, fronts, troughs, outflow boundaries, squall lines, and drylines. The analysis domain covers most of North America, the Western Atlantic and Eastern Pacific oceans, and the Gulf of Mexico.

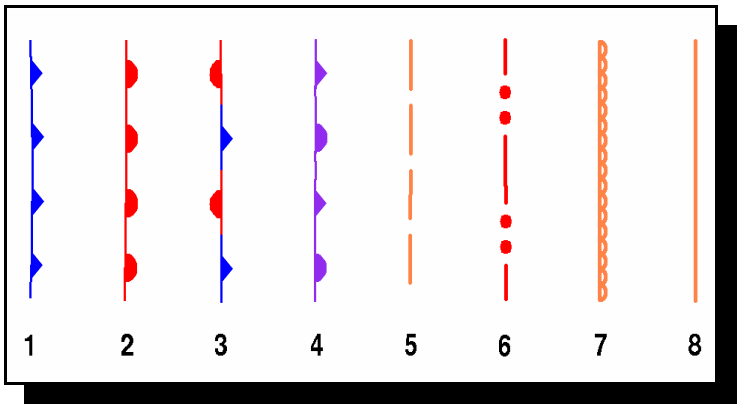

Figure 1. Color Codes for Features.

Key to Features

1 - Cold Front; 2 - Warm Front; 3 - Stationary Front
4 - Occluded Front; 5 -- Trough ("TROF") Also used to Depict Outflow Boundary ("OUTFLOW BNDRY");
6 -- Squall Line; 7 -- Dry Line; 8 -- Tropical Wave ("TRPCL WAVE")

Each surface front and squall line (1, 2, 3, 4, 6 above) is accompanied by a 3-digit label (green) that has a bracket either before or after it. Using the example "[ABC", here is how to translate the label:

A: Type of Front
0 = stationary
2 = warm
4 = cold
6 = occluded
7 = squall line

B: Strength of Front
0 = none (applies only to squall line)
1 = weak, weakening
2 = weak
3 = weak, strengthening
4 = moderate, weakening
5 = moderate
6 = moderate, strengthening
7 = strong, weakening
8 = strong
9 = strong, strengthening

C: Other Characteristics
0 = none
5 = forming
6 = quasi-stationary
7 = with waves
8 = diffuse

9.3.4 Format.

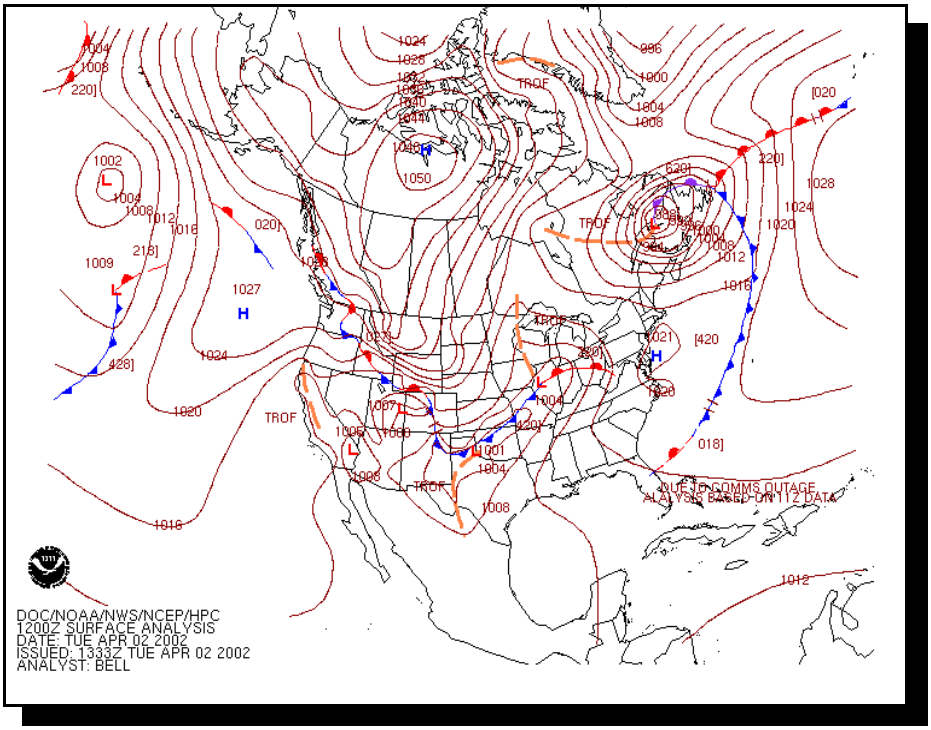

Figure 2. Surface Fronts & Pressure Analysis

9.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

10. **Coded Surface Frontal Positions (product category CODSUS)**.

10.1 Mission Connection. HPC issues the coded Surface Frontal positions to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public and aviation weather programs.

10.2 Issuance Guidelines.

10.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

10.2.2 Issuance Criteria. These are routine, schedule-driven products.

10.2.3 Issuance Time. Refer to Table 2.

10.2.4 Valid Time. Refer to Table 2.

HPC Coded Surface Frontal Position Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0130	0000	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0430	0300	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0730	0600	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1030	0900	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1330	1200	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1630	1500	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1930	1800	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
2230	2100	CODSUS	ASUS01 KWBC	Coded description of frontal analysis

Table 2. Coded Surface Frontal Position Product Schedule.

10.2.5 Product Expiration Time. Not applicable.

10.3 Technical Description. Charts should follow the format and content described in this section.

10.3.1 MND Broadcast Line. Not applicable.

10.3.2 MND Header. The MND header is "CODED SURFACE FRONTAL POSITIONS."

10.3.3 Content. These are text bulletins that give the latitude and longitude positions (to the nearest degree) of vertices along the analyzed frontal positions or significant weather features along with the positions of high and low pressure centers.

Here is specific information on how to decode/interpret the bulletin:

44109 = 44 N Lat 109 W Long

HIGHS = High Pressure Centers
LOWS = Low Pressure Centers
COLD = Cold Front
WK = Weak
WARM = Warm Front
STNRY = Stationary Front
TROF = Weak Surface Boundary
OCFNT = Occluded Front

10.3.4 Format.

Note: Valid time is decoded MMDDHH. Example below is January 8th, 09 UTC.

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ASUS01 KWBC 081030
CODSUS

CODED SURFACE FRONTAL POSITIONS
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
500 AM EST WED JAN 08 2003

VALID 010809Z
HIGHS 1040 41108 1028 2999 1032 67152 1030 55132
LOWS 989 58104 982 5872 962 4657 962 54171 990 46155 1010 29120 1004 35136
1016 33114
TROF 4177 4078 3978 3780 3583
WARM WK 4757 4756 4755 4853 4749 4544 4442 4138 3834
COLD WK 4976 4878 4882 5087 5191 5395
TROF 5972 5672 5474
OCFNT WK 5474 5274 5174 4976
WARM WK 4976 4875 4775 4675 4474
OCFNT WK 4557 4658 4657 4757
COLD WK 4757 4554 4353 4052 3852 3553 3254 2957 2661 2564
2466 2268 2171 2074 1878
COLD WK 58104 57107 57112 58117 59122
STNRY WK 59123 60127 60130 60135 60138 60139 60141 60144 60146 59151
58160 57168 55173 53177 51179 51176
WARM WK 45152 44152 43151 41150 38149
OCFNT WK 45155 46154 46153 45152
COLD WK 45152 43152 39153 36154 34156
WARM WK 58104 57102 56100 5598 5598 5396 5395
TROF 4855 5052 5449
TROF 63114 62110 61107 58104
OCFNT WK 34136 35137 36138 37138
COLD WK 37138 35134 31130 26131 22134
WARM WK 37138 38138 40138 42137 44134 44133 45130

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10.4 Updates, Amendments, and Corrections. This product is not updated or amended. Corrections are issued as necessary.

11. **South America Discussion (product category PMDSA)**.

11.1 Mission Connection. HPC International Desk issues an overview discussion of numerical model guidance for South America to regional users.

11.2 Issuance Guidelines.

11.2.1 Creation Software. HPC uses commercial text editor software.

11.2.2 Issuance Criteria. This is a routine, schedule-driven product.

11.2.3 Issuance Time. 1630 UTC, non-holiday Monday-Friday only.

11.2.4 Valid Time. 0000 UTC Day 1 thru 0000 UTC Day 5.

11.2.5 Product Expiration Time. Product expires with next product issuance.

11.3 Technical Description. The South America Discussion should follow the format and content described in this section.

11.3.1 MND Broadcast Line. Not applicable.

11.3.2 MND Header. The MND header is "SOUTH AMERICA MODEL DISCUSSION - INTERNATIONAL DESKS."

11.3.3 Content. This text bulletin provides an overview of the models analyzed for South America south of the Equator for Days 1 - 5.

11.3.4 Format.

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FXSA20 KWBC 291540
PMDSA

SOUTH AMERICA MODEL DISCUSSION - INTERNATIONAL DESKS
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
1540 UTC TUE APR 29 2003

GFS DATA AT FTPPRD.NCEP.NOAA.GOV/PUB/DATA/NCCF/COM/AVN/PROD/

THE FLOW PATTERN HAS EVOLVED TO ONE DOMINATED BY SHORT WAVE
PERTURBATIONS REVOLVING AROUND THE LONG WAVE FEATURES. THIS IS
CREATING TIMING DIFFERENCES AMONG THE MODELS...AS WELL AS
TEMPORAL DISCONTINUITIES BETWEEN THE RUNS. THIS IS LEADING TO LOW
CONFIDENCE IN THE FORECAST BEYOND 72 HRS.

AS PREVIOUSLY FORECASTED...THE BOLIVIAN HIGH AT 200 HPA IS TO
MEANDER OVER NORTHERN BOLIVIA NEAR 12S 65W THROUGH 36-48
HRS...SUPPORTING A RIDGE ON AREAS NORTH OF 25S AND WEST OF 50W.
BY 72 HRS THE HIGH WILL MIGRATE EAST TO 15S 50W...WHERE IT WILL
START TO COLLAPSE. BY 96-120 HRS A NARROW RIDGE WILL REMAIN OVER
THE CONTINENT TO CONFINE TO AREAS NORTH OF 10S. ANOTHER SOUTHERN
HEMISPHERE RIDGE WILL EXTEND ACROSS THE TROPICAL ATLANTIC ALONG
05S TO NORTHERN BRASIL NEAR 05S 50W THROUGH 48 HRS. BY 72-96 HRS
THE DISSIPATING BOLIVIAN RIDGE WILL EMBED IN THIS AXIS.
OVERALL...THE PATTERN OF UPPER LEVEL DIVERGENCE THAT HAS BEEN
DOMINATING NORTHERN SOUTH AMERICA IS TO PERSIST THROUGH 120 HRS.
THIS IS TO CONTINUE VENTING DEEP CONVECTION ON AREAS NORTH OF
10S...WITH MOST ACTIVE ALONG THE EQUATOR AND THE NORTHERN COAST
OF BRASIL...WITH CLUSTERS OF HEAVY RAINFALL TO PRODUCE DAILY
MAXIMA OF 35-50MM/DAY. LOCALLY HIGHER AMOUNTS ARE POSSIBLE. ON
THE SIERRA OF PERU CONVECTION IS TO BECOME LESS WIDESPREAD AND
ACTIVE...WITH WIDELY ISOLATED CONVECTION TO DOT THE SIERRA DURING
THE CYCLE.

FARTHER SOUTH OVER THE CONTINENT...A QUASISTATIONARY SURFACE
FRONT WILL EXTEND ACROSS SOUTHERN BRASIL-NORTHERN PROVINCES OF
ARGENTINA THROUGH 48 HRS...WHERE IT IS TO CONTINUE SUPPORTING
SCATTERED RAINFALL WITH ACCUMULATION OF 05-15MM/DAY. RAINFALL
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MAXIMA OF 15-45MM ARE EXPECTED OVER SOUTHERN BRASIL-CENTRAL
MESOPOTAMIA THROUGH 36-48 HRS. A NORTHERN STREAM 500 HPA TROUGH
OFF THE CENTRAL COAST OF CHILE WILL MOVE INLAND THROUGH 30-36
HRS...WHICH IS ABOUT 12-18 HRS SLOWER THAN ON THE PREVIOUS RUN.
BY 48 HRS IT WILL REACH RIO DE LA PLATA REGION...WHERE IT WILL
INTERACT WITH THE STATIONARY FRONT...INDUCING A FRONTAL WAVE OFF
THE COAST OF URUGUAY/SOUTHERN BRASIL. AS THE WAVE DEEPENS...THE
FRONT WILL UNDULATE NORTH ACROSS PARANA/SANTA CATARINA TO
PARAGUAY BY 60-72 HRS...INTO SAO PAULO-MATO GROSSO DO SUL/
PARAGUAY BY 96 HRS. AFTER 60-72 HRS RAINFALL ALONG THE FRONT WILL
BECOME DISORGANIZED...WITH DAILY ACCUMULATION OF 05-10MM/DAY TO
MAINLY AFFECT SAO PAULO/MATO GROSSO DO SUL BRASIL AND EL CHACO
PARAGUAYO/NORTHWESTERN ARGENTINA-SOUTHERN BOLIVIA.

A 500 HPA RIDGE ALONG THE SOUTHERN COAST OF CHILE/75W IS TO
GENERALLY PERSIST THROUGH 84-96 HRS...TO MODULATE SOMEWHAT AS
PROGRESSIVE SHORT WAVE PERTURBATIONS STREAK ACROSS THE SOUTH

(...portion omitted for brevity...)

THE COAST OF PATAGONIA BY 48 HRS. A SECONDARY FRONTAL
PERTURBATION WILL FOLLOW...TO STRIKE SOUTHERN CHILE BY 48 HRS.
RAINFALL WITH THESE SYSTEMS WILL CONFINE TO EXTREME SOUTHERN
CHILE/PATAGONIA...WITH ACCUMULATION OF 00-05MM/DAY...AND MAXIMA
OF 15-35MM EXPECTED TO OCCUR AT 36-60 HRS.

ON THE NORTHERN STREAM...THE MODELS MADE ADJUSTMENTS TO A 500 HPA
SHORT WAVE TROUGH OVER THE EASTERN PACIFIC...WITH A CUTOFF LOW TO
CENTER NEAR 35S 90W AT 48 HRS. A SOUTHERN STREAM TROUGH WILL
SLOWLY DRAW/PUSH THE NORTHERN STREAM VORTEX EASTWARD...WITH AN
OPEN PERTURBATION TO REACH LA SERENA-ANTOFAGASTA CHILE BY 96
HRS...INTO NORTHWESTERN ARGENTINA AT 108 HRS AND THROUGH EL CHACO
ARGENTINO/PARAGUAY BY 120 HRS. THIS TROUGH IS TRIGGER ISOLATED
CONVECTION OVER SOUTHERN BOLIVIA/NORTHWESTERN ARGENTINA BY 96-108
HRS.

ON THE SOUTHERN STREAM...A 500 HPA TROUGH WILL MOVE ACROSS THE
PACIFIC ALONG 90W AND SOUTH OF 35S AT 72 HRS. THIS SYSTEM WILL
SLOWLY ERODE/DISPLACE THE BLOCKING RIDGE OFF THE COAST OF
CHILE...WITH TROUGH TO MOVE ALONG 80W BY 96 HRS...INTO SOUTHERN
CHILE ALONG 70W BY 120 HRS. THE ASSOCIATED SURFACE FRONT WILL
ENTER SOUTHERN CHILE AT 96-108 HRS.

SANTOS...INMET (BRAZIL)
DAVISON...NCEP(HPC)

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11.4 Updates, Amendments, and Corrections. No updates or amendments are issued for this product. HPC will correct for format and grammatical errors as required.

12. **Daily Hazardous Weather Chart (no product ID or Header)**.

12.1 Mission Connection. HPC compiles a hazardous weather chart that highlights the critical weather expected over the next 24 hours. The chart is based on HPC's 12- and 24-hour fronts

and instantaneous precipitation charts (92F, 94F) and (L2P, L4P) flash flood (94E) and heavy snow/ice (93S, 94S) guidance chart, the Storm Prediction Center's Day 1 and Day 2 convective outlooks, and would denote the official Tropical Prediction Center's tropical storm track if within the domain of the graphic. This product supports the NWS public weather programs.

12.2 Issuance Guidelines.

12.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

12.2.2 Issuance Criteria. These are routine, schedule-driven products.

12.2.3 Issuance Time. Issued daily no later than 1000 UTC.

12.2.4 Valid Time. 1200 UTC Day 1 to 1200 UTC Day 2.

12.2.5 Product Expiration Time. Product expires with the next issuance.

12.3 Technical Description. Charts should follow the format and content described in this section.

12.3.1 MND Broadcast Line. Not applicable.

12.3.2 MND Header. Not applicable.

12.3.3 Content. These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines, etc.) and high and low pressure centers at the valid time of the product. In addition significant weather hazards such as flash flooding, severe thunderstorms, heavy snow, etc., are highlighted.

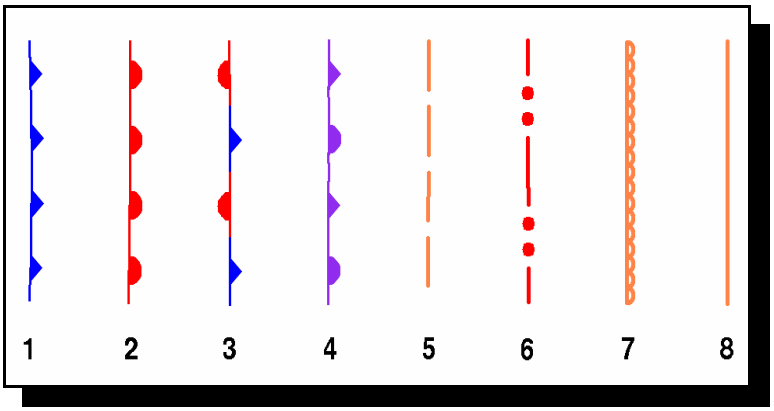

Figure 3. Color Codes for Features.

Key to features:
1 -- Cold Front; 2 -- Warm Front; 3 -- Stationary Front; 4 -- Occluded Front;
5 – Trough ("TROF") also used to depict Outflow Boundary ("OUTFLOW BNDRY"); 6 -- Squall Line;
7 -- Dry Line; 8 -- Tropical Wave ("TRPCL WAVE")

12.3.4 Format. Product will follow the format as indicated in Figure 4, below.

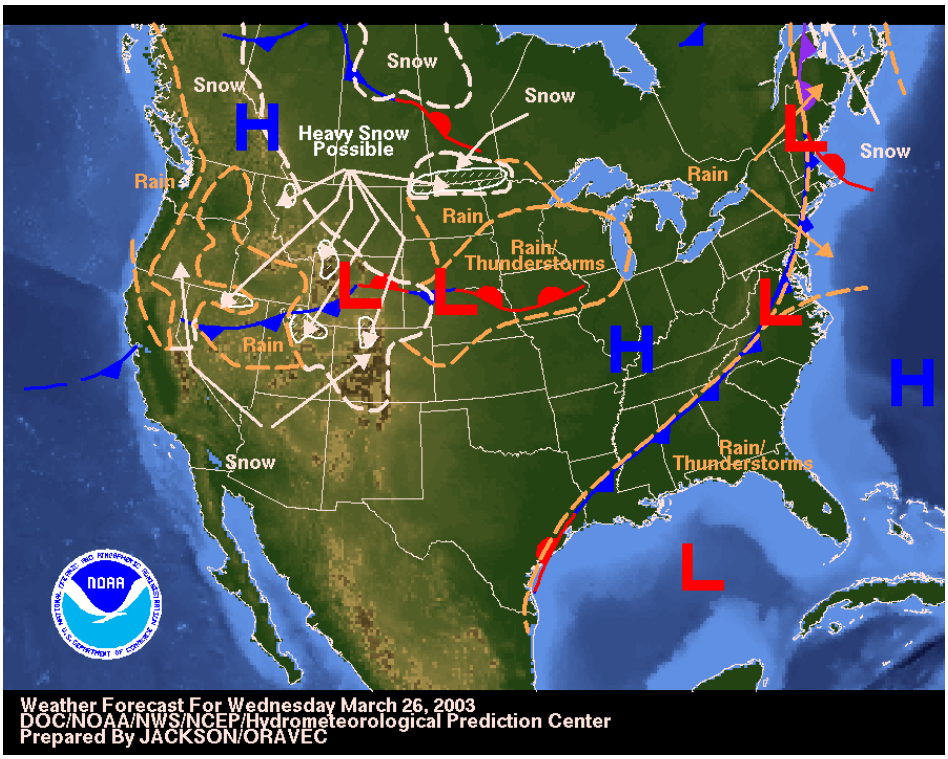

Figure 4. Forecast fronts/pressure centers and significant weather.

12.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

13. **Surface Fronts & Pressure Charts (12-48 hrs) (product categories 92F, 94F, 96F, 98F)**.

13.1 Mission Connection. HPC issues the surface fronts and pressure charts as guidance to CONUS NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the location and strength of major meteorological features over the next 48 hours. The products support the NWS public and aviation weather programs.

13.2 Issuance Guidelines.

13.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

13.2.2 Issuance Criteria. These are routine, schedule-driven products.

13.2.3 Issuance Time. Refer to Table 3.

13.2.4 Valid Time. Refer to Table 3.

HPC Short-range Instantaneous Precipitation Graphical Guidance Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430	1200 day 1 0000 day 2	RBG92F RBG94F	PPIC01 KWBC PPIE01 KWBC	12-hour fronts and pressures 24-hour fronts and pressures
0730	1200 day 2 0000 day 3	RBG96F RBG98F	PPIG01 KWBC PPII01 KWBC	36-hour fronts and pressures 48-hour fronts and pressures
0900	1800 day 1 0600 day 2	RBG92F RBG98F	PPIC01 KWBC PPIE01 KWBC	18-hour fronts and pressures 30-hour fronts and pressures
1630	0000 day 1 1200 day 1	RBG92F RBG94F	PPIC01 KWBC PPIE01 KWBC	12-hour fronts and pressures 24-hour fronts and pressures
1930	0000 day 2 1200 day 2	RBG96F RBG98F	PPIG01 KWBC PPII01KWBC	36-hour fronts and pressures 48-hour fronts and pressures
2100	1800 day 1 0600 day 2	RBG92F RBG98F	PPIC01 KWBC PPIE01 KWBC	18-hour fronts and pressures 30-hour fronts and pressures

Table 3. Surface Fronts and Pressure Chart Issuance and Valid Times.

13.2.5 Product Expiration Time. Not applicable.

13.3 Technical Description. Charts should follow the format and content described in this section.

13.3.1 MND Broadcast Line. Not applicable.

13.3.2 MND Header. Not applicable.

13.3.3 Content. These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines) and high and low pressure centers at the valid time of the product.

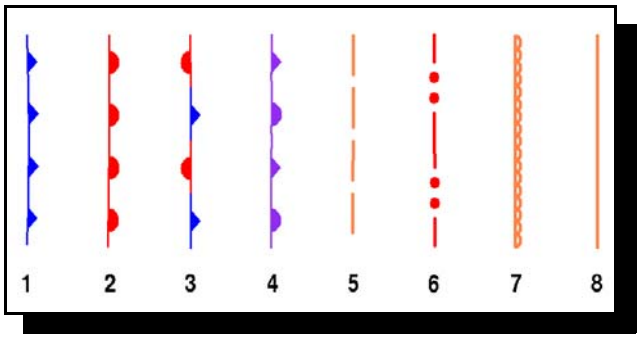

Figure 5. Color Codes for Features

Key to Features

1 -- Cold Front; 2 -- Warm Front; 3 -- Stationary Front
4 -- Occluded Front; 5 – Trough (“TROF”) also used to depict Outflow Boundary (“OUTFLOW BNDRY”)
6 -- Squall Line; 7 -- Dry Line; 8 -- Tropical Wave (“TRPCL WAVE”)

13.3.4 Format. Product will follow the format as indicated in Figure 6.

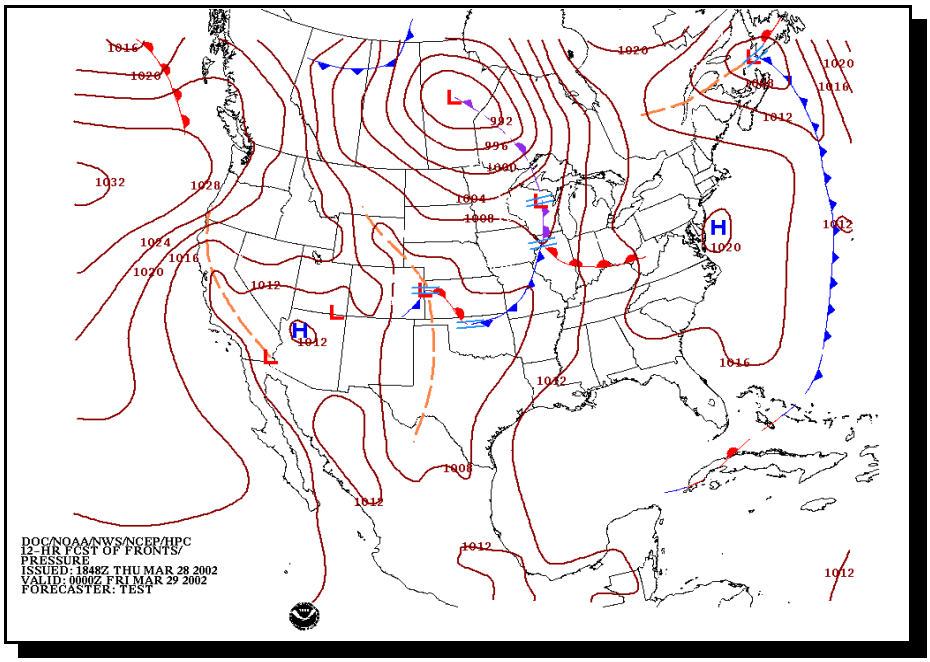

Figure 6. Forecast Fronts/Pressure Centers.

13.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are made as necessary.

14. **Surface Instantaneous Precipitation Charts (12-48 hrs) (product categories L2P, L4P, L6P, L8P)**.

14.1 Mission Connection. HPC issues the instantaneous precipitation forecast charts as guidance to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the instantaneous location and coverage of precipitation and precipitation type every 12 hours through 48 hours. The products support the NWS public and aviation weather programs.

14.2 Issuance Guidelines.

14.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

14.2.2 Issuance Criteria. These are routine, schedule-driven products.

14.2.3 Issuance Time. Refer to Table 4.

14.2.4 Valid Time. Refer to Table 4.

HPC Short-range Instantaneous Precipitation Graphical Guidance Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430	1200 day 1 0000 day 2	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	12-hour instantaneous precipitation 24-hour instantaneous precipitation
0730	1200 day 2 0000 day 3	RBGL6P RBGL8P	PEIG63 KWBC PEII64 KWBC	36-hour instantaneous precipitation 48-hour instantaneous precipitation
0900	1800 day 1 0600 day 2	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	18-hour instantaneous precipitation 30-hour instantaneous precipitation
1630	0000 day 1 1200 day 1	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	12-hour instantaneous precipitation 24-hour instantaneous precipitation
1930	0000 day 2 1200 day 2	RBGL6P RBGL8P	PEIG63 KWBC PEII64 KWBC	36-hour instantaneous precipitation 48-hour instantaneous precipitation
2100	1800 day 1 0600 day 2	RBGL2P RBGL4P	PEIC61 KWBC PEIE62 KWBC	18-hour instantaneous precipitation 30-hour instantaneous precipitation

Table 4. Instantaneous Precipitation Chart Issuance and Valid Times.

14.2.5 Product Expiration Time. Not applicable.

14.3 Technical Description. Charts should follow the format and content described in this section.

14.3.1 MND Broadcast Line. Not applicable.

14.3.2 MND Header. Not applicable.

14.3.3 Content. A graphical product that depicts the instantaneous position of precipitation, both type and coverage, at the valid time of the product.

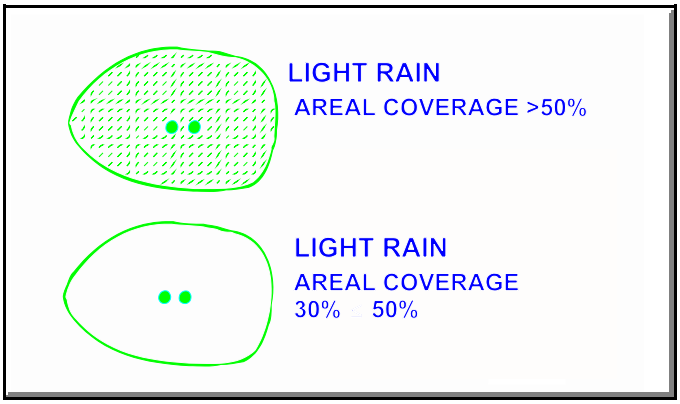

Figure 7. Areal Precipitation Depiction.

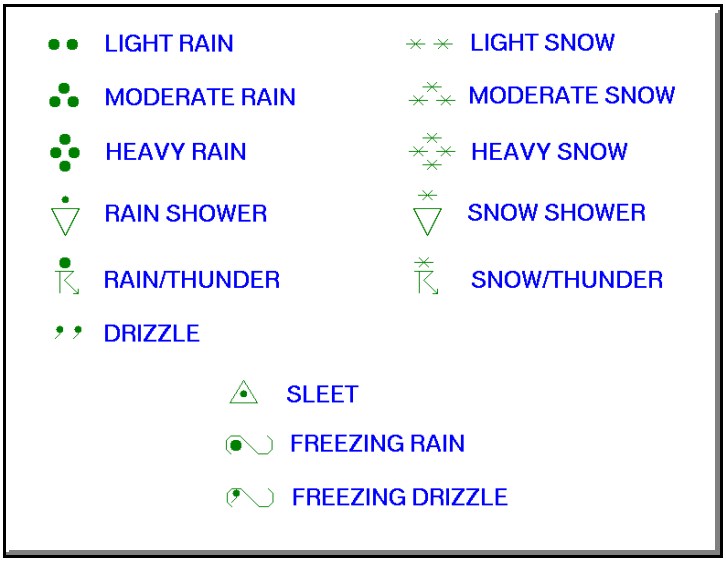

Figure 8. Precipitation Symbols and Intensity.

14.3.4 Format.

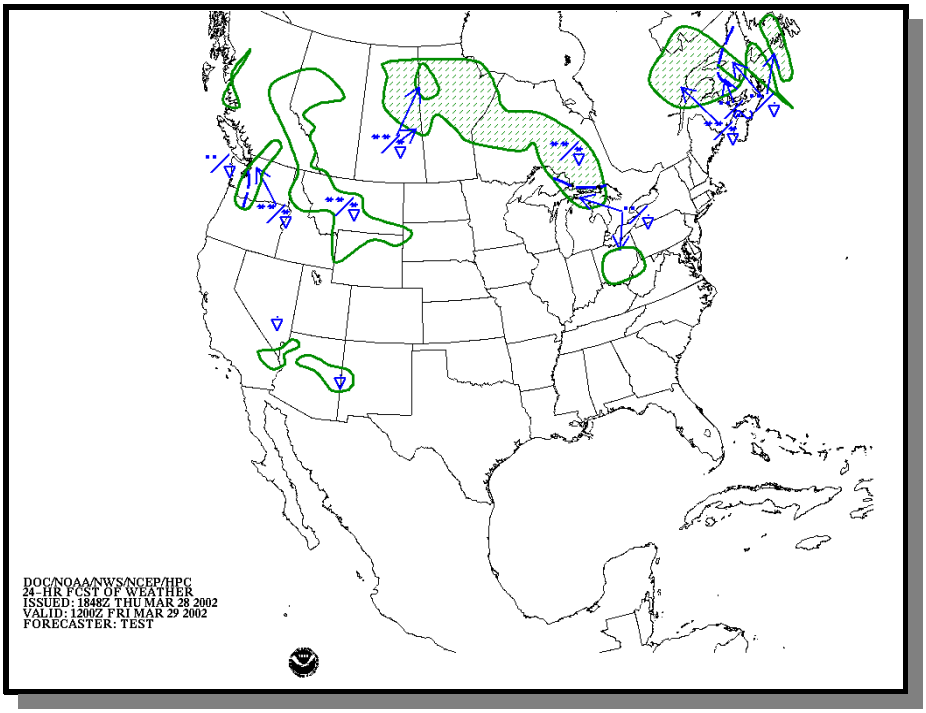

Figure 9. Forecast of Instantaneous Precipitation and Type.

14.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

15. **Coded Surface Frontal Positions Forecast (product category CODSRP)**.

15.1 Mission Connection. HPC issues the coded Surface Frontal Position Forecasts to NWS field offices and to the general meteorological community (private sector and the media). These products support the NWS public weather program.

15.2 Issuance Guidelines.

15.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

15.2.2 Issuance Criteria. These are routine, schedule-driven products.

15.2.3 Issuance Time. Refer to Table 5.

15.2.4 Valid Time. Refer to Table 5.

HPC Coded Surface Frontal Position Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430	1200 Day 1 0000 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
0630	1200 day 2 0000 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
0800	1800 Day 1 0600 Day2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1630	0000 Day 1 1200 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1830	0000 Day 2 1200 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
2000	1800 Day 1 0600 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast

Table 5. Coded Surface Frontal Position Product Schedule.

15.2.5 Product Expiration Time. Not applicable.

15.3 Technical Description. Message should follow the format and content described in this section.

15.3.1 MND Broadcast Line. Not applicable.

15.3.2 MND Header. The MND header is "CODED SURFACE FRONTAL POSITIONS FORECAST."

15.3.3 Content. These are text bulletins that describe the latitudes and longitudes (to the nearest degree) of vertices along the forecast frontal positions, along with the positions of highs and lows and pressures. These correspond directly with the 92F, 94F, 96F, 98F products described in section 13. These text messages allow the private sector, academia, and the media to plot the location of these weather systems.

Here is specific information on how to decode/interpret the bulletin:

44109 = 44 N Lat 109 W Long

HIGHS = High Pressure Centers
LOWS = Low Pressure Centers
COLD = Cold Front
WK = Weak
WARM = Warm Front
STNRY = Stationary Front
TROF = Weak Surface Boundary
OCFNT = Occluded Front

15.3.4 Format.

```
FSUS02 KWBC 071630
CODSRP

CODED SURFACE FRONTAL POSITIONS FORECAST
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
1130 AM EST TUE JAN 07 2003

12HR PROG VALID 080000Z
HIGHS 1002 5186 1029 2798 1030 40109
LOWS 983 5073 990 57101 990 5496
COLD WK 3869 3770 3572 3475 3377
TROF 4076 3878 3680 3483
OCFNT WK 5672 5471 5172 5073
OCFNT WK 5073 4973 4873 4774
COLD WK 4774 4774 4675 4578 4581 4684 4788 4991
STNRY WK 4991 5092 5194 5395 5496 5598 56100 57101 58101
TROF 4793 4594 4396 4299 40102
TROF 36130 35128 33127 32126 29125
COLD WK 58101 57104 56108 57113 57118 58121
TROF 61106 59104 58101

24HR PROG VALID 081200Z
HIGHS 1020 29117 1022 2595 993 5278 1023 41113 1023 36111
LOWS 983 4885
TROF 39129 37127 35126 33124 30124 28124
COLD WK 4290 4192 3993 3995 3897 37100 37102 38104 39105
TROF 3977 3878 3680 3483
COLD WK 4885 4988 5091 5193 5296 52100 52104 52109 54113 56118
```

```
58121
STNRY WK 4378 4480 4582 4784 4885
STNRY WK 39105 40105 41105 42106 44108 46110 46113 46115 46116 46118
45119 45120
TROF 57101 55100 5498 5396
TROF 5265 5066 4767 4569 4371

$$
```

15.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

16. **Ultraviolet Index (UVI) Forecast (product category UVICAC)**.

16.1 Mission Connection. The Climate Prediction Center (CPC) issues a UV Index (UVI) Forecast for 58 United States' cities daily. CPC generates the UVI Forecast to help people understand the effects on their skin of their exposure to the sun's ultraviolet radiation. This product is used by the media and supports public weather programs.

16.2 Issuance Guidelines.

16.2.1 Creation Software. CPC uses commercial text editor software.

16.2.2 Issuance Criteria. This is a routine, schedule-driven product.

16.2.3 Issuance Time. The UVI product is issued daily at approximately 1800 UTC.

16.2.4 Valid Time. The product is valid for solar noon (approximately 12 noon local standard time or 1pm local daylight time), Day 2.

16.2.5 Product Expiration Time. Product expires after valid time.

16.3 Technical Description. The UVI product should follow the format and content described below.

16.3.1 MND Broadcast Line. Not applicable.

16.3.2 MND Header. The UVI MND header is, "NOAA/EPA ULTRAVIOLET INDEX /UVI/FORECAST."

16.3.3 Content. Both text-based and web-based product specify the forecast UVI for solar noon, Day 2.

16.3.4 Format.

```
AEUS41 KWBC 251800
UVICAC

NOAA/EPA ULTRAVIOLET INDEX /UVI/ FORECAST
NWS CLIMATE PREDICTION CENTER CAMP SPRINGS MD
100 PM EST TUE MAR 25 2003

VALID MAR 26 2003 AT SOLAR NOON /APPROXIMATELY NOON
```

```
LOCAL STANDARD TIME OR 100 PM LOCAL DAYLIGHT TIME/

THE UV INDEX IS CATEGORIZED BY EPA AS FOLLOWS

           UVI             EXPOSURE LEVEL
           0 1 2              MINIMAL
           3 4                LOW
           5 6                MODERATE
           7 8 9              HIGH
           10 AND GREATER     VERY HIGH

FOR HEALTH RELATED ISSUES...CONTACT EPA AT 1-800-296-1996 OR
CDC 404-488-4347.  FOR TECHNICAL INFORMATION ON HOW UVI VALUES
ARE GENERATED...CONTACT THE NATIONAL WEATHER SERVICE AT
301-713-0622.

CITY               STATE  UVI       CITY               STATE  UVI
ALBUQUERQUE          NM     7       LITTLE ROCK          AR     6
ANCHORAGE            AK     1       LOS ANGELES          CA     6
ATLANTIC CITY        NJ     3       LOUISVILLE           KY     4
ATLANTA              GA     3       MEMPHIS              TN     5

(...portion omitted for brevity)...

JACKSONVILLE         FL     5       WASHINGTON           DC     3
LAS VEGAS            NV     6       WICHITA              KS     6

$$
```

Cities Used in UVICAC (UVI Forecast):

```
ALBUQUERQUE              DETROIT                  NORFOLK
ANCHORAGE                DOVER                    OKLAHOMA CITY
ATLANTIC CITY            HARTFORD                 OMAHA
ATLANTA                  HONOLULU                 PHILADELPHIA
BALTIMORE                HOUSTON                  PHOENIX
BILLINGS                 INDIANAPOLIS             PITTSBURGH
BISMARCK                 JACKSON MS               PORTLAND ME
BOISE                    JACKSONVILLE             PORTLAND OR
BOSTON                   LAS VEGAS                PROVIDENCE
BUFFALO                  LITTLE ROCK              RALEIGH
BURLINGTON VT            LOS ANGELES              SALT LAKE CITY
CHARLESTON WV            LOUISVILLE               SAN FRANCISCO
CHARLESTON SC            MEMPHIS                  SAN JUAN
CHEYENNE                 MIAMI                    SEATTLE
CHICAGO                  MILWAUKEE                SIOUX FALLS
CLEVELAND                MINNEAPOLIS              ST. LOUIS
CONCORD                  MOBILE                   TAMPA
DALLAS                   NEW ORLEANS              WASHINGTON DC
DENVER                   NEW YORK                 WICHITA
DES MOINES
```

CPC also generates a graphical product depicting the same information and posts it on the web.

Example:

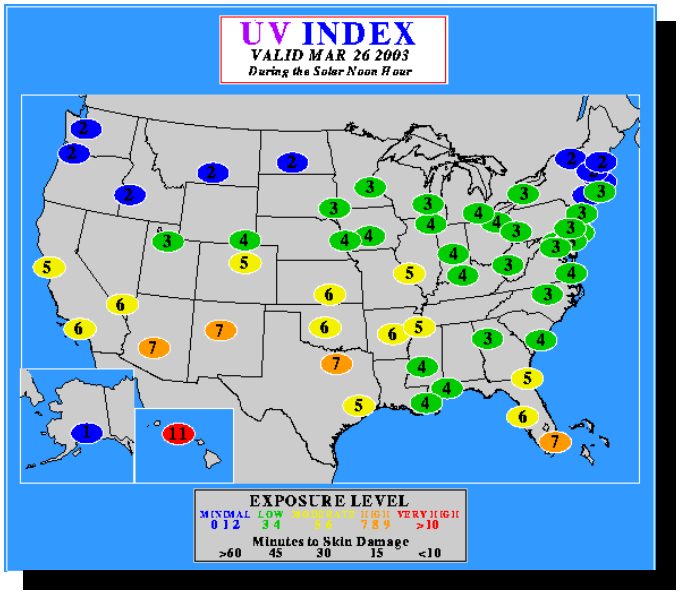

Figure 10. Ultraviolet Index Map

16.4 Updates, Amendments, and Corrections. No updates or amendments are issued for this product. CPC will correct for format and grammatical errors as required.

17. **Selected Cities Forecast (product categories SCS [11-14])**.

17.1 Mission Connection. HPC issues the Selected Cities Forecast that provides the observed maximum and minimum temperatures, observed precipitation, and forecast weather and temperatures for 162 cities in the United States, Puerto Rico and the U.S. Virgin Islands. This product is heavily used by the print media and supports the public weather program.

17.2 Issuance Guidelines.

17.2.1 Creation Software. HPC uses commercial text editor software.

17.2.2 Issuance Criteria. This is a routine, schedule-driven product.

17.2.3 Issuance Time. 0100 and 1300 UTC.

17.2.4 Valid Time. 1200 UTC Day 1 to 1200 UTC Day 2.

17.2.5 Product Expiration Time. Product expires with the next issuance.

17.3 Technical Description. The Selected Cities Forecast should follow the format and content described in this section.

17.3.1 MND Broadcast Line. Not applicable.

17.3.2 MND Header. The SCS header is, "SELECTED CITIES WEATHER SUMMARY AND FORECASTS."

17.3.3 Content. This is a tabular text product consisting of the previous day's maximum and minimum temperatures and observed liquid precipitation along with forecast weather and temperatures for the next two days for 162 cities in the United States, Puerto Rico and the U.S. Virgin Islands. The abbreviated forecasts are derived from the Coded Cities Forecasts (CCFs) issued by WFOs. The last part (SCS14, FPUS23 KWNH) has a final section that gives the highest and lowest temperatures observed in the conterminous United States. These extremes are usually for stations with elevations below 8,500 feet. Normally stations will represent towns or cities of over 1,000 population. Some exceptions to these guidelines may be made due to noteworthiness of the location (e.g., Death Valley, California, or West Yellowstone, Montana). If a city is missing it is noted as MISG in the weather category and MM/MM for the max and min temperature.

17.3.4 Format.

Example...Evening Issuance:

```
FPUS20 KWNH 080146
SCS11

SELECTED CITIES WEATHER SUMMARY AND FORECASTS...PART 1 OF 4
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
736 PM EST TUE JAN 07 2003

TEMPERATURES INDICATE NIGHTTIME LOW...DAYTIME HIGH
B INDICATES TEMPERATURES BELOW ZERO
PRECIPITATION FOR 24 HOURS ENDING AT 7 PM EST

                                FORECAST        FORECAST
                TUE...JAN 07    WED....JAN 08   THU....JAN 09
CITY            LO/HI   PCPN    WEA     LO/HI   WEA     LO/HI

ABILENE TX      26  62          FAIR    38/72   FAIR    48/58
AKRON CANTON    05  31   .02    CLOUDY  29/39   MOCLDY  35/42
ALBANY NY       22  22   .04    SNOSHW  23/34   SNOSHW  25/32
ALBUQUERQUE     29  51          PTCLDY  31/57   PTCLDY  34/56
ALLENTOWN       24  26          PTCLDY  23/38   PTCLDY  30/44
AMARILLO        29  61          PTCLDY  34/72   MOCLDY  31/50
etc...

$$
```

Key to Weather Terminology:

PTCLDY = Partly Cloudy
MOCLDY = Mostly Cloudy
VRYHOT = Very Hot
VRYCLD = Very Cold
SNOSHW = Snow Showers
DRZL = Drizzle
FLRRYS = Snow Flurries
RNSNOW = Rain and Snow
BLZZRD = Blizzard
BLGSNO = Blowing Snow
TSTRMS = Thunderstorms
SHWRS = Rain Showers
FZRAIN = Freezing Rain
FZDRZL = Freezing Drizzle

Cities Used in Selected Cities Products:

Cities for SCS11

ABILENE TX
AKRON CANTON
ALBANY NY
ALBUQUERQUE
ALLENTOWN
AMARILLO
ANCHORAGE
ASHEVILLE
ATLANTA
ATLANTIC CITY
AUSTIN
BALTIMORE
BATON ROUGE
BILLINGS
BIRMINGHAM
BISMARCK
BOISE
BOSTON
BRIDGEPORT
BROWNSVILLE
BUFFALO
BURLINGTON VT
CARIBOU
CASPER
CHARLESTON SC
CHARLESTON WV
CHARLOTTE
CHATTANOOGA
CHEYENNE
CHICAGO
CINCINNATI
CLEVELAND
COLORADO SPGS
COLUMBIA SC
COLUMBUS GA
COLUMBUS OH

Cities for SCS12

CONCORD NH
CORPUS CHRISTI
DALLAS FT WORTH
DAYTON
DAYTONA BEACH
DENVER
DES MOINES
DETROIT
DULUTH
EL PASO
ELKINS
ERIE
EUGENE
EVANSVILLE
FAIRBANKS
FARGO
FLAGSTAFF
FLINT
FORT SMITH
FORT WAYNE
FRESNO
GOODLAND
GRAND JUNCTION
GRAND RAPIDS
GREAT FALLS
GREEN BAY
GREENSBORO
HARRISBURG
HARTFORD SPGFLD
HELENA
HONOLULU
HOUSTON INTCNTL
HUNTSVILLE AL
INDIANAPOLIS
JACKSON MS
JACKSONVILLE
JUNEAU
KANSAS CITY
KEY WEST
KNOXVILLE
LAKE CHARLES
LANSING
LAS VEGAS
LEXINGTON

Cities for SCS13

LINCOLN
LITTLE ROCK
LOS ANGELES
LOUISVILLE
LUBBOCK
MACON
MADISON
MEDFORD
MEMPHIS
MIAMI BEACH
MIDLAND ODESSA
MILWAUKEE
MPLS ST PAUL
MOBILE
MONTGOMERY
NASHVILLE
NEW ORLEANS
NEW YORK CITY
NEWARK
NORFOLK VA
NORTH PLATTE
OKLAHOMA CITY
OMAHA
ORLANDO
PADUCAH
PENDLETON
PEORIA
PHILADELPHIA
PHOENIX
PITTSBURGH
POCATELLO
PORTLAND ME
PORTLAND OR
PROVIDENCE
PUEBLO
RALEIGH DURHAM
RAPID CITY
RENO
RICHMOND
ROANOKE
ROCHESTER NY
ROCKFORD
SACRAMENTO
ST LOUIS
ST THOMAS VI

Cities for SCS14

SALEM OR	SIOUX CITY	TULSA
SALT LAKE CITY	SIOUX FALLS	TUPELO
SAN ANGELO	SOUTH BEND	WACO
SAN ANTONIO	SPOKANE	WASHINGTON DC
SAN DIEGO	SPRINGFIELD IL	W PALM BEACH
SAN FRANCISCO	SPRINGFIELD MO	WICHITA
SAN JOSE	SYRACUSE	WICHITA FALLS
SAN JUAN PR	TALLAHASSEE	WILKES BARRE
SANTA FE	TAMPA ST PTRSBG	WILMINGTON DE
ST STE MARIE	TOLEDO	YAKIMA
SAVANNAH	TOPEKA	YOUNGSTOWN OH
SEATTLE	TUCSON	YUMA
SHREVEPORT		

17.4 Updates, Amendments, and Corrections. These products are not updated or amended. HPC will correct for format and grammatical errors as required.

18. **Travelers Forecast (product categories TAV [10, 12, 13])**.

18.1 Mission Connection. HPC issues the Travelers Forecast that provides the forecast weather and temperatures for several dozen cities in the United States and Puerto Rico. This product is used by the media and supports public weather programs.

18.2 Issuance Guidelines.

18.2.1 Creation Software. HPC uses commercial text editor software.

18.2.2 Issuance Criteria. This is a routine, schedule-driven product.

18.2.3 Issuance Time. 1100 and 2300 UTC.

18.2.4 Valid Time. 1200 UTC Day 1 to 1200 UTC Day 2.

18.2.5 Product Expiration Time. Product expires with the next issuance.

18.3 Technical Description. The Travelers Forecast should follow the format and content described in this section.

18.3.1 MND Broadcast Line. Not applicable.

18.3.2 MND Header. The TAV MND header is, “TRAVELERS FORECAST TABLE.”

18.3.3 Content. This is a tabular text product consisting of the forecast weather and temperatures for the next two days for 51 cities in the United States and Puerto Rico.

18.3.4 Format.

Example - Morning Issuance

```
FPUS10 KWNH 081100
TAV10

TRAVELERS FORECAST TABLE...PART 1 OF 3
```

```
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
600 AM EST WED JAN 08 2003

TEMPERATURES INDICATE DAYTIME HIGH...NIGHTTIME LOW
B INDICATES TEMPERATURES BELOW ZERO

                FORECAST        FORECAST
                WED....JAN 08   THU....JAN 09
CITY            WEA     HI/LO   WEA     HI/LO
ALBANY NY       SNOSHW  35/27   SNOSHW  36/15
ANCHORAGE       CLOUDY  19/19   CLOUDY  30/20
ATLANTA         SUNNY   56/41   PTCLDY  62/39
BILLINGS        SUNNY   55/21   SUNNY   31/11
BOISE           HAZE    36/23   HAZE    36/28
BOSTON          SNOW    37/29   SNOW    38/25
CHICAGO         PTCLDY  52/31   MOCLDY  34/18
COLUMBUS OH     PTCLDY  50/36   PTCLDY  41/22
DALLAS FT WORTH SUNNY   73/50   PTCLDY  64/33
DENVER          SUNNY   69/28   PTCLDY  45/19
DETROIT         PTCLDY  44/33   MOCLDY  35/18
HONOLULU        SUNNY   80/61   SUNNY   79/63
KANSAS CITY     PTCLDY  70/33   PTCLDY  44/19
LAS VEGAS       MISG    MM/MM   MISG    MM/MM
etc...

$$
```

Key to Weather Terminology:

PTCLDY = Partly Cloudy
MOCLDY = Mostly Cloudy
VRYHOT = Very Hot
VRYCLD = Very Cold
SNOSHW = Snow Showers
DRZL = Drizzle
FLRRYS = Snow Flurries
RNSNOW = Rain and Snow
BLZZRD = Blizzard
BLGSNO = Blowing Snow
TSTRMS = Thunderstorms
SHWRS = Rain Showers
FZRAIN = Freezing Rain
FZDRZL = Freezing Drizzle

Cities Used in Travelers Forecast Tables:

Cities for TAV10

ALBANY NY
ANCHORAGE
ATLANTA
BILLINGS
BOISE
BOSTON
CHICAGO
COLUMBUS OH
DALLAS FT WORTH
DENVER
DETROIT
HONOLULU
KANSAS CITY
LAS VEGAS
LOS ANGELES
LOUISVILLE
MEMPHIS
MIAMI BEACH
MPLS ST PAUL
NEW ORLEANS
OKLAHOMA CITY
PHOENIX
RALEIGH DURHAM
RAPID CITY
SAN ANTONIO
SAN FRANCISCO
SEATTLE
TAMPA ST PTRSBG
WASHINGTON DC

Cities for TAV12

ALBANY NY
ANCHORAGE
ATLANTA
ATLANTIC CITY
BOSTON
BUFFALO
BURLINGTON VT
CHARLESTON WV
CHARLOTTE
CHICAGO
CLEVELAND
DALLAS FT WORTH
DENVER
DETROIT
GREAT FALLS
HARTFORD SPGFLD
HONOLULU
HOUSTON INTCNTL
KANSAS CITY
LAS VEGAS
LOS ANGELES
MIAMI BEACH
MPLS ST PAUL
NEW ORLEANS
NEW YORK CITY
NORFOLK VA
OKLAHOMA CITY
ORLANDO
PHILADELPHIA
PHOENIX
PITTSBURGH
PORTLAND ME
PORTLAND OR
RENO

Cities for TAV13

SALT LAKE CITY
SAN DIEGO
SAN FRANCISCO
SAN JUAN PR
SEATTLE
SPOKANE
SYRACUSE
TAMPA ST PTRSBG
WASHINGTON DC

18.4 Updates, Amendments, and Corrections. These products will not be updated or amended. HPC will correct for format and grammatical errors as required.

19. **Canadian Urban Forecasts (product category CSCNMC)**.

19.1 Mission Connection. The product is generated by the Meteorological Service of Canada (MSC) and disseminated internationally to United States' public interests.

19.2 Issuance Guidelines.

19.2.1 Creation Software. The NWS Telecommunications Gateway receives this product and retransmits it to domestic users.

19.2.2 Issuance Criteria. This is a routine, schedule-driven product.

19.2.3 Issuance Time. This product is issued daily at approximately 0730 UTC and1930 UTC.

19.2.4 Valid Time. Through Day 2.

19.2.5 Product Expiration Time. Product expires with the next issuance.

19.3 Technical Description. The product follows the format and content described in this section.

19.3.1 MND Broadcast Line. Not applicable.

19.3.2 MND Header. The MND header for this product is "CANADIAN URBAN FORECASTS."

19.3.3 Content. This product contains tabular arrays of short forecasts and predicted high and low temperatures (in degrees Celsius) for numerous Canadian cities.

19.3.4 Format.

Example:

```
FPCN12 CWAO 040800
CANADIAN URBAN FORECASTS
TEMPERATURE IN DEGREES CELSIUS
CITY           FORECAST                  FORECAST
               FRIDAY                    SATURDAY
               WEA            HI         WEA                LO/HI
IQALUIT        WINDY          M06        INCRG CLOUDINESS   M12/00
YELLOWKNIFE    MAINLY SUNNY   8          VARIABLE CLOUD     M02/8
WHITEHORSE     MAINLY CLOUDY  8          PARTLY CLOUDY      M03/7
```
etc.

Cities for CSCNMC

CALGARY	OTTAWA	THUNDER BAY
CHARLOTTETOWN	QUEBEC	TORONTO
EDMONTON	REGINA	VANCOUVER
FREDERICTON	SAINT JOHN NB	VICTORIA
HALIFAX	SASKATOON	WINDSOR
IQALUIT	ST JOHNS NFLD	WINNIPEG
KAMLOOPS	SUDBURY	WHITEHORSE
MONTREAL	SYDNEY	YELLOWKNIFE

19.4 Updates, Amendments, and Corrections. Not applicable.

20. **Days 3 - 7 Surface Progs (product categories 9JH-9NH)**.

20.1 Mission Connection. HPC issues the Days 3 through 7 Surface Progs as guidance to NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the location of surface fronts and pressures for the Days 3 through 7. The products support the NWS public and aviation weather programs.

20.2 Issuance Guidelines.

20.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

20.2.2 Issuance Criteria. These are routine, schedule-driven products.

20.2.3 Issuance Time. Refer to Table 6.

20.2.4 Valid Time. Refer to Table 6.

HPC Day 3 - 7 Surface Prog Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
1815	1200 Day 3	RBG9JH	PPHK01 KWBC	Medium Range Day 3 Surface Fcst
1815	1200 Day 4	RBG9KH	PPHK01 KWBC	Medium Range Day 4 Surface Fcst
1815	1200 Day 5	RBG9LH	PPHK01 KWBC	Medium Range Day 5 Surface Fcst
1815	1200 Day 6	RBG9MH	PPHK01 KWBC	Medium Range Day 6 Surface Fcst
1815	1200 Day 7	RBG9NH	PPHK01 KWBC	Medium Range Day 7 Surface Fcst

Table 6. Day 3 - 7 Surface Prog Product Schedule.

20.2.5 Product Expiration Time. Not applicable.

20.3 Technical Description. Charts should follow the format and content described in this section.

20.3.1 MND Broadcast Line. Not applicable.

20.3.2 MND Header. Not applicable.

20.3.3 Content. These are graphical products that depict the locations of surface fronts and pressures over North America, the central North Pacific and eastern North Atlantic for Days 3-7.

20.3.4 Format

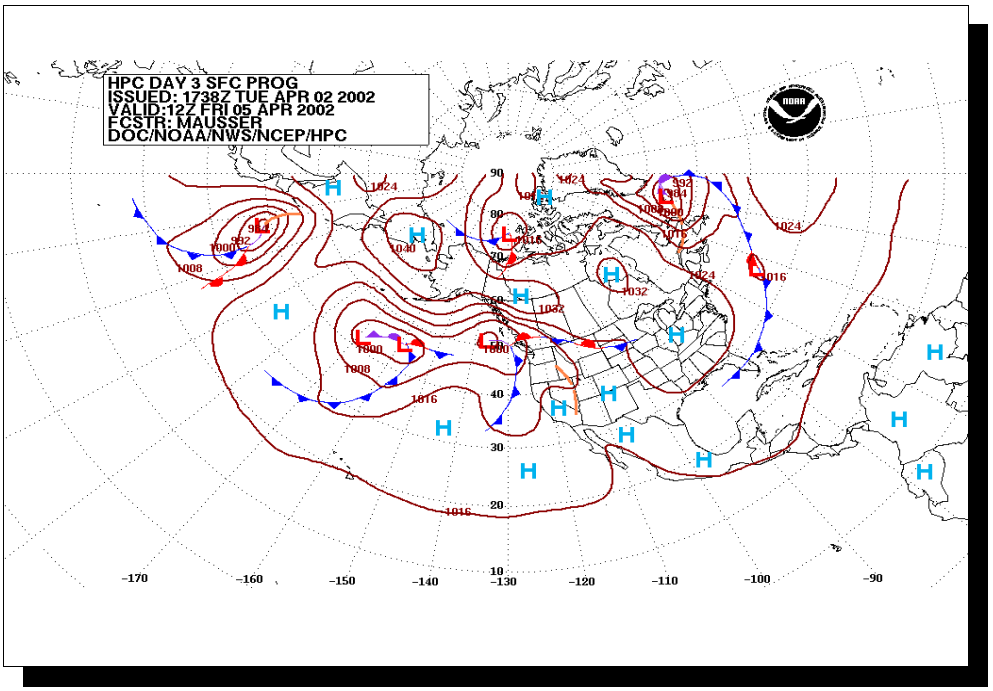

Figure 11. Day 3 Surface Prog.

20.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

21. **Days 3 - 7 Temp./Precipitation Forecast Anomalies (product categories 93P-97P)**.

21.1 Mission Connection. HPC issues the Days 3 - 7 Temperature/Precipitation Forecast Anomalies charts as guidance to CONUS NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. The products support the NWS public weather program.

21.2 Issuance Guidelines.

21.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

21.2.2 Issuance Criteria. These are routine, schedule-driven products.

21.2.3 Issuance Time. Refer to Table 7.

21.2.4 Valid Time. Refer to Table 7.

HPC Day 3-7 Temperature/Precipitation Forecast Anomalies Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
1330	1200 Day 1	RBG93P	PYWK43 KWBC	Day 3 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG94P	PYWM44 KWBC	Day 4 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG95P	PYWO45 KWBC	Day 5 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG96P	PYQ46 KWBC	Day 6 Temp./Precipitation Anomalies Forecast
1330	1200 Day 1	RBG97P	PYWS98 KWBC	Day 7 Temp./Precipitation Anomalies Forecast

Table 7. Days 3 - 7 Temperature/Precipitation Anomalies Forecast Product Schedule.

21.2.5 Product Expiration Time. Not applicable.

21.3 Technical Description. Charts should follow the format and content described in this section.

21.3.1 MND Broadcast Line. Not applicable.

21.3.2 MND Header. Not applicable.

21.3.3 Content. These are graphical products that depict the Days 3 - 7 temperature and precipitation forecasts and deviation from climatology for 93 stations over the CONUS.

21.3.4 Format.

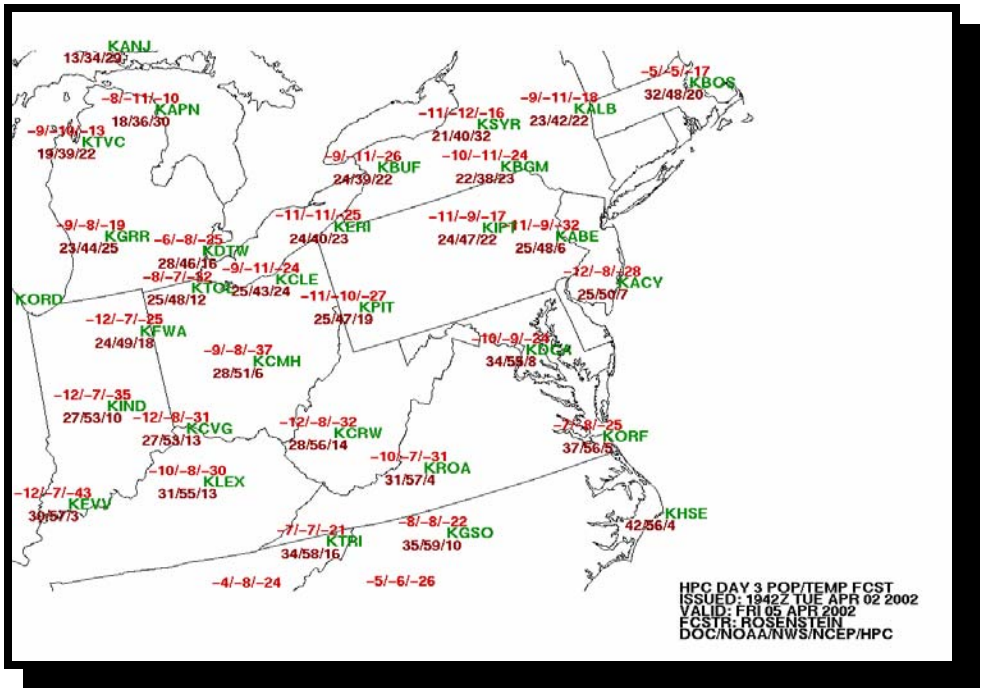

Figure 12. Sample Day 3 NE Region POP/TEMP Anomalies & Fcst.

KEY

AMIN/AMAX/APOP
Station ID
Tmin/Tmax/POP

AMIN - Min Temp Anomaly
AMAX - Max Temp Anomaly
APOP - POP Anomaly
Tmin - Fcst Min Temperature
Tmax - Fcst Max Temperature
POP - Probability of Precipitation
Temperatures in degrees Fahrenheit

21.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

22. **5-Day Mean Max/Min Temperature Anomalies (product categories 95A, 95B)**.

22.1 Mission Connection. HPC issues the 5-day mean Maximum and Minimum Temperature anomaly charts as guidance to CONUS NWS field offices and to the general meteorological community (private sector and the media) including the aviation community. These products describe the maximum and minimum temperature anomalies from climatology over the next five days. The products support the NWS public weather program.

22.2 Issuance Guidelines.

22.2.1 Creation Software. HPC uses N-AWIPS software to generate these products.

22.2.2 Issuance Criteria. These are routine, schedule-driven products.

22.2.3 Issuance Time. Refer to Table 8.

22.2.4 Valid Time. Refer to Table 8.

HPC Mean 5-Day Max/Min Temperature Anomalies Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
1330	1200 Day 1-1200 Day 5	RBG95A	PTIO52 KWBC	5 - day mean Maximum Temp anomaly (MOS)
1330	1200 Day 1-1200 Day 5	RBG95B	PTIO53 KWBC	5 - day mean Minimum Temp anomaly (MOS)

Table 8. Mean 5 Day Max/Min Temperature Anomaly Product Schedule.

22.2.5 Product Expiration Time. Not applicable.

22.3 Technical Description. Charts should follow the format and content described in this section.

22.3.1 MND Broadcast Line. Not applicable.

22.3.2 MND Header. Not applicable.

22.3.3 Content. These are graphical products that depict the mean AVN MOS maximum and minimum temperature anomalies in degrees Fahrenheit from climatology.

22.3.4 Format. See Figures 13 and 14.

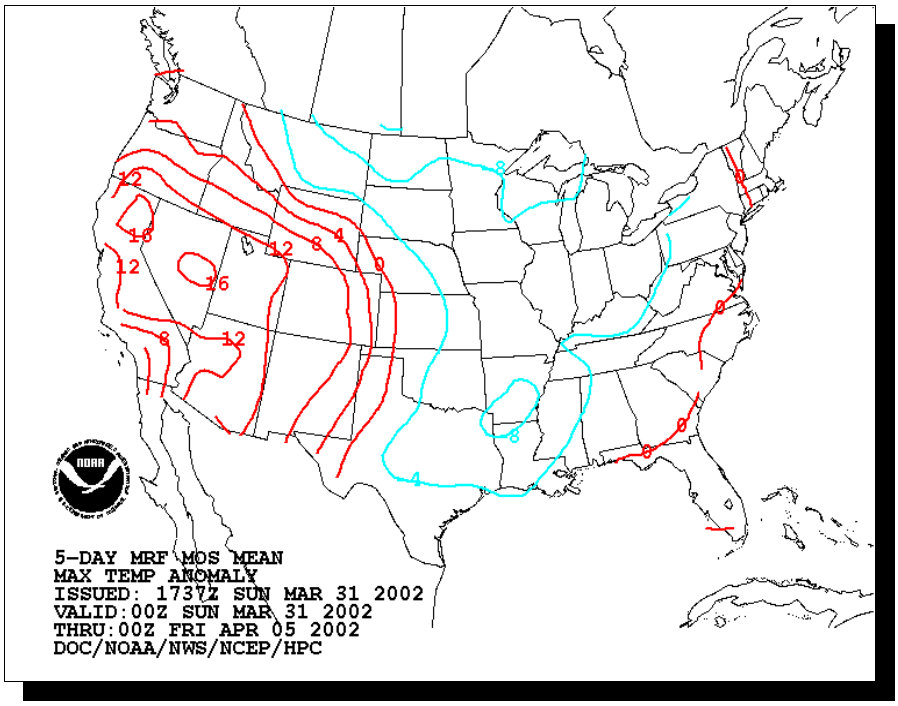

Figure 13. Mean 5-Day Maximum Temperature Anomaly (MOS).

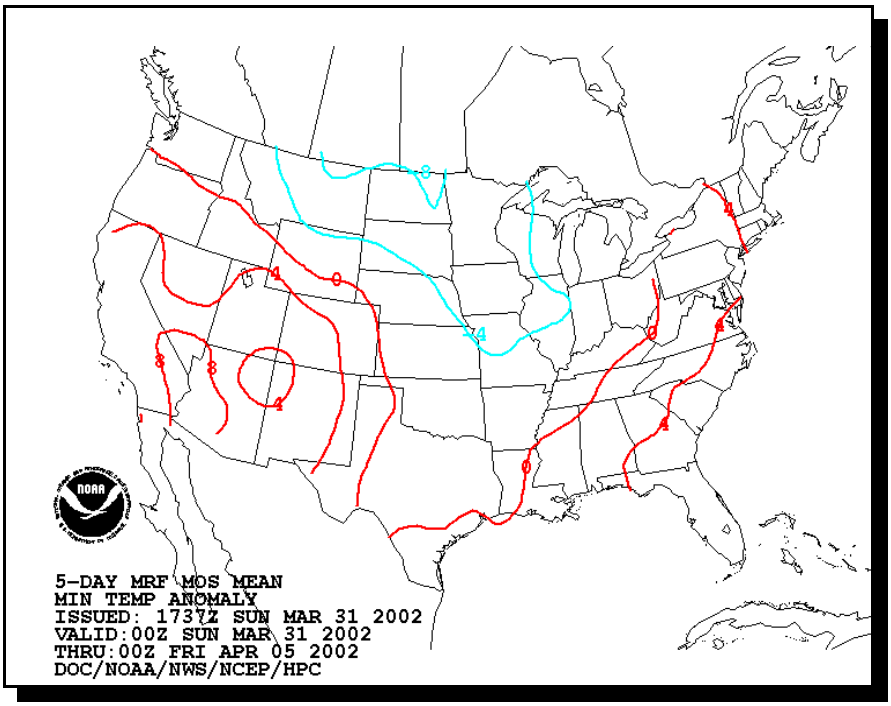

Figure 14. Mean 5-Day Minimum Temperature Anomaly (MOS).

22.4 Updates, Amendments, and Corrections. These products are not updated or amended. Corrections are issued as necessary.